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Master Bicycle Plan Recommendations

GIS Mapping

Trail base mapping for the project was created using a Geographic Information System (GIS) program. This GIS program is used as a data management and graphic tool to create the trail mapping exhibits; to calculate accurate lengths for trail segments; and, to identify impacted land parcels. Base data used in the formulation of this report was provided by Abington Township, Montgomery County, the Delaware County Regional Planning Commission (DVRPC), and by the Pennsylvania Spatial Data Access (PASDA) website.

Trail Types – Descriptions

Bikeway Classifications

The following are nationally recognized bikeway classifications as per the American Association of State Highway Transportation Officials (AASHTO). These classifications are specific to bicycle transportation routes and do not include other pedestrian facilities such as sidewalks and off-road hiking trails which are described later in this chapter.

Class 1 Bikeways are completely separated from the roadway. They are also known as 'off-road trails', 'greenways', 'shared use paths', 'multi-use paths', and/or 'side paths'.

Class 2 Bikeways are designated bicycle lanes within a roadway for exclusive use of the cyclist and contains special pavement markings, line striping, and signage. Bike lanes are one-way in the direction of motor vehicle traffic. The standard width for a bike lane is five (5) feet.

Class 3 Bikeways are also known as 'shared lanes' 'bike routes', 'sharrows', or 'marked shared lanes'. In these situations the cyclist shares the roadway with vehicular traffic and there are no special accommodations for the cyclist within the road right-of-way. Marked shared lanes, or sharrows, use pavement markings and signs such as "Share the Road" or "Bicycles May Use Full Lane" to define the route. Shared lanes or bike routes use only signage to define the route.

Shared Use Path (Off-Road)

The trail type that provides for the largest population of users is a Shared Use Path, or Multi-use trail, also known as Class 1 Bikeways (described above). The American Association of State Highway and Transportation Officials (AASHTO) defines a Shared Use Path as: a bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.

This trail type provides for a variety of trail users, depending on the trail surface paving and available right-of-way width. Shared use path users are generally non-motorized and may include but are not limited to typical upright adult bicyclists, recumbent bicyclists, tandem bicyclists, child bicyclists, inline skaters, roller bladers, skateboarders, kick scooter users, and pedestrians (including walkers, runners, people using both non-motorized and motorized wheelchairs, people with baby strollers, people walking dogs, and others).

Another general trait of shared use paths is universal accessibility for those with disabilities due to gentle slopes, adequate widths, and smooth surfaces. Parking areas for shared use path segments should provide facility access in accordance with the Federal Americans with Disabilities Act (ADA) guidelines to provide for trail users with disabilities.



Susquehanna Avenue is an existing example of Class 2 Bikeway



AASHTO recommend shared use paths be a minimum of ten (10) feet wide for a two-way trail. Depending on the user volume, widths of twelve feet (12') or fourteen feet (14') are recommended to avoid potential conflicts. An additional two-foot (2') shoulder is recommended on either side of the trail surface to provide clearance from trees, poles, walls, fences or any other lateral obstruction. Site conditions may warrant additional safety measures such as fencing and increased shoulder widths. In very rare circumstances, where certain conditions exist, 8' width for a two-way path is acceptable.

Hiking Trails

A hiking trail may be defined as a recreational trail that does not meet the design requirements of a multi-use trail such as width, slopes & surfacing. An advantage of hiking trails is that they can allow for access and recreational use of the land quickly at a relatively low cost. A disadvantage of hiking trails is that they generally limit the number and type of trail users due to their minimal width, steeper slopes, and softer surfaces, and generally do not meet ADA requirements.

Trail Surface Types

Asphalt surfaces provide for the widest variety of trail users including bicyclist, walkers, joggers, wheelchair users, and in-line skaters. Initial installation costs are relatively high compared to other trail surface types. However, long term maintenance costs will remain lower than others if properly installed and maintained. Asphalt trails are preferred in flood prone areas. Porous asphalt can also be used in situations where stormwater infiltration or a pervious surface is required. Porous asphalt should not be used in flood prone areas where silt will clog the voids in the pavement.

Concrete is the most durable material for trail surfaces but is the most costly. Concrete trails are commonly used in urban environments. Advantages of concrete include longer service life, reduced susceptibility to cracking and deformation from roots and weeds, and a more consistent riding surface after years of use and exposure to the elements. The joints in concrete trail treads can degrade the experience of using the path

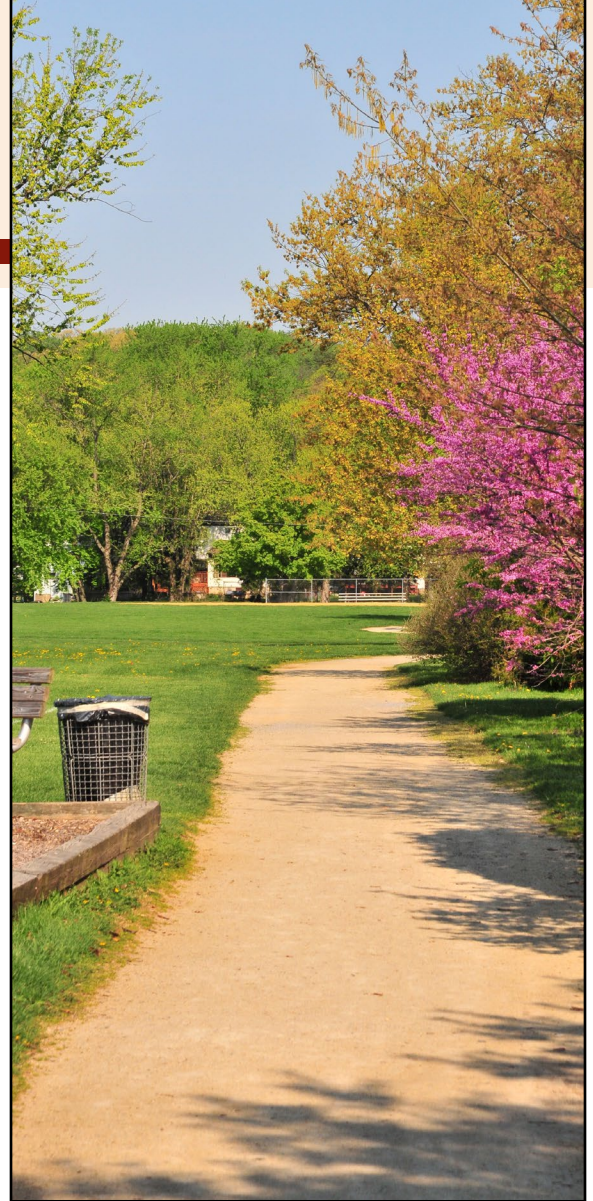
for some wheeled users. In addition, users can see pavement markings more easily on asphalt than on concrete, particularly at night. Concrete's light color on a trail reflects the sunlight.

Compacted aggregate surfaces can accommodate all trail user types with the exception of in-line skaters. Initial installation costs for this trail surface are relatively low, however long term maintenance costs increase due to this surface's higher susceptibility to erosion, especially if not properly installed with swales and cross drains. Crushed limestone or sandstone or "Trail Surface Aggregate (TSA) Mix" are typical aggregates used in this situation. A compacted aggregate surface can also serve as base material for an asphalt surface if trail use increases or funds become available for a surfacing upgrade. Compacted aggregate surfaces should be avoided in flood prone areas or slopes over 5%.

Compact earth surfaces are the least expensive to install, however they limit the types and number of trail users. Compact earthen surfaces are primarily used for hiking only or horse trails adjacent to multi-use trails that receive significantly less trail user volume. Hiking trails may be considered as an alternate means to reach the more environmentally sensitive areas found within the floodplain area to provide routes to the river for environmental education, bird watching, or fishing access.

Trails and many other recreational facilities are commonly developed within floodplains to take advantage of the relatively flat land. These trails may require additional maintenance to remove debris deposited by a flood event. If a trail is placed where flood waters will have a significant erosion effect, asphalt surfaces are recommended. Trails should not be located within a floodway, which is where the most significant flood damage occurs.

Wood plank / Boardwalk surfaces are often used in floodplains and wetland areas where wet and inundated ground surface is common. Boardwalks can provide an elevated, accessible surface for trail users but are often not as slip resistant and are more costly than other surfaces mentioned above.



An example of compacted aggregate that can be found in Roslyn Park



Existing compacted earth trails



Confident rider along Pine Road



Casual rider using the Pennypack Trail

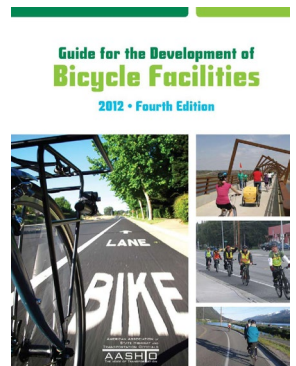
Sources:

Guide For Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (AASHTO), 2012;

Pennsylvania Trail Design & Development Principles, Guidelines for Sustainable, Non-motorized Trails, Pennsylvania Department of Conservation and Natural Resources (DCNR), 2013

Bicyclist Types

The American Association of State Highway and Transportation Officials (AASHTO), and the Pennsylvania Department of Transportation (PennDOT) both classify bicyclists into one of the following three groups:



Experienced / Confident - These riders generally use their bicycles as they would a motor vehicle. They are riding for transportation, convenience, and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with vehicular traffic. They prefer a sufficient operating space on the travel way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift position.

Casual / Less Confident – Less confident adult riders may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets.

Child Cyclists – Riding on their own or with their parents, child cyclists may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. Residential streets with low motor

vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles, can accommodate children without encouraging them to ride in the travel lane of major arterials.

Proposed Trail Connections

This plan proposes to enhance Abington's bicycle network by providing routes that link residential neighborhoods and important Township destinations. The plan also connects Abington residents to destinations, bicycle routes, and trails in adjacent municipalities and provides links to ten public transit stations that provide access to other systems at the regional level. In total, the proposed routes will add approximately 47 miles of trails within the Township.

On-Road Routes (Bikeways)

These routes are intended to provide safe local connections to township destinations and easily accessible recreational opportunities. These on-road routes include a combination of class 2 bikeways (designated bicycle lanes) and class 3 bikeways ("shared lane" bicycle routes).

Class 2 bicycle lanes are proposed along routes of high anticipated use and also where determined to be feasible based upon a review of existing right of way widths and site conditions. Class 3 "shared lane" routes propose an improved shoulder with appropriate signage and striping to clearly indicate a shared road situation. Shared lane routes are proposed in areas where existing right of way widths or existing site conditions do not allow for five foot bicycle lanes. These routes provide important Township connections and connections to adjacent municipalities.

Costs for each of these proposed trail segments was estimated. Construction requirements for the on-road improvements include asphalt shoulder improvements. Also included in the estimations are bikeway striping, wayfinding and safety signage.



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Off-Road Routes (Shared Use Paths)

These routes are completely separated from Township roadways and are intended to provide safe multiuse recreational and transportation opportunities within the Township for and bicyclists of all skill levels. These multiuse trails proposed are not extensive in length and are primarily for the purpose of providing short linkages between multiple on-road bicycle routes. These routes are proposed on Township park lands as well as private parcels owned by the area schools, cemeteries, and churches. Trails on private parcels will require further discussions and agreements or easements between the Township and property owners prior to any trail design or implementation.

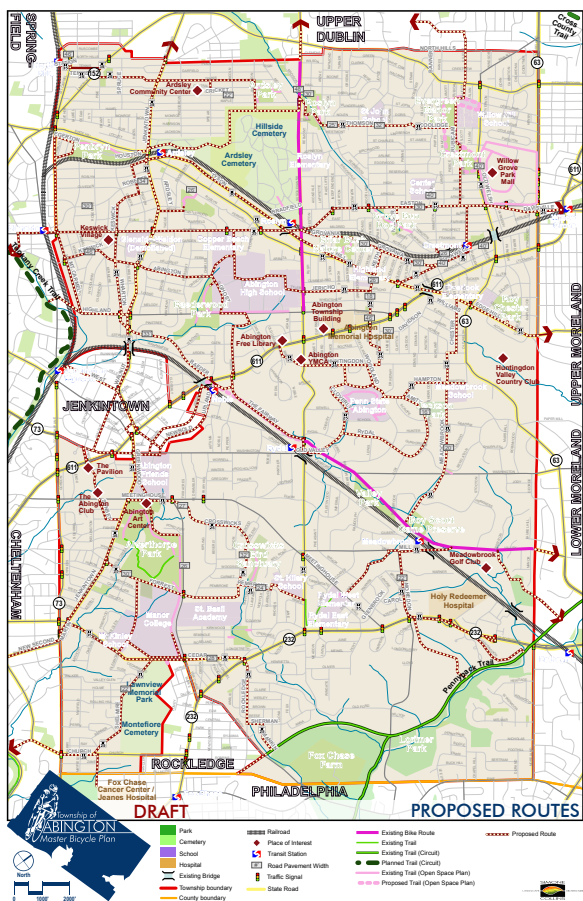
This plan proposes a 10' trail width and asphalt and compacted aggregate surfacing for these shared use paths. Further design and engineering of these trails will be needed prior to any installation in order to determine the most appropriate surface treatment for each specific situation.

Proposed Routes

Proposed trail improvements are shown on the Trails Map at the end of this section. Trails are identified on the map by route numbers with even numbers indicating a north-south trail alignment and odd numbers indicating an east-west trail alignment. The routes are also divided into segments for more precise identification and cost estimation purposes. Descriptions of the proposed trail network are discussed below. Detailed mapping of these proposed routes are shown at the end of this chapter.

Route #1 – Tennis Avenue Connector (North Hills Station to Ardsley Park)

Connecting to the Township's SEPTA rail stations is an important part of this plan. This segment links the nearby Ardsley neighborhood to North Hills Station in the far western corner of the Township. The route also connects to the Ardsley Community Center and two small neighborhood parks on Tennis Avenue. The eastern end of this route terminates at Ardsley Park and the access to the Ardsley Wildlife Sanctuary on Maple Avenue. The route is proposed as a share the road route with shared lane pavement markings and signage.



Route #2 – Jenkintown Road Bike Route (Upper Dublin Township to Cheltenham Township)

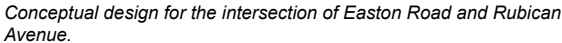
Jenkintown Road is an already popular bicycle route through the Abington. The roadway links Abington residents to Jenkintown Borough, Upper Dublin Township and Cheltenham Township. Other important destinations along this route include the Ardsley Station, Hillside Cemetery, Abington Friends School, and Alverthorpe Park. This route is proposed as a shared the road route with signage only. Because the roadway is owned and maintained by PennDOT, agreements would need to be obtained from the department to install any “share the road” or “use full lane” signage.

Route #3 – Penbryn Park to Crestmont Park Connector (Mount Carmel Avenue to Rubicam Avenue)

This route is proposed to connect several important destinations in the Township such as Penbryn Park, Ardsley Station, Hillside Cemetery, Roslyn Park, and Evergreen Manor Park. The route proposes to utilize a combination of low volume residential roads, existing park trails, and new shared use paths. Segments of the route on roadways are proposed to be share the road with shared lane pavement markings. Off road trails are proposed through the Ardsley Cemetery. Bicycle routes are also proposed within the Hillside cemetery property. Further coordination and agreements between the Township and cemetery owners are needed to complete this segment.

Route #4 – Crestmont Bike Route (Upper Dublin Township to Crestmont Station)

The Cross County Trail is a proposed trail on the “Circuit” network. This trail is proposed just to the north of Abington Township in Upper Dublin Township. The Upper Dublin Bicycle Path and Trail masterplan displays a proposed route for this trail as well as a connection to School Lane just north of the border with Abington. It is proposed that route #4 connect to School Lane in Upper Dublin in order to link Abington residents to the Cross County Trail. This route extends from School Lane to Edge Hill Road. This route also connects to Evergreen Manor Park, Willow Hill School, Crestmont Park, the Willow Grove Park Mall, and the Crestmont SEPTA station. This route is proposed as a combination of share the



Route #5 – Tyson Avenue / Edge Hill Road Bike Route (Weldon Road to Upper Moreland Township)

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route provides an important cross connection through the Township and links to the Ardsley Station, Roslyn Station, Briar Bush Nature Center, Overlook Elementary, and Roy-Chester Park. This route provides the only opportunity in the Township to cross Old York Road via a bridge and not at grade.

Route #6 - Mount Carmel Avenue Bike Route (Penbryn Park to Jenkintown Road)

This segment provides a connection from Penbryn Park to Highland Avenue and Jenkintown Road. Mount Carmel Road is proposed as a share the road route with signage only. The route also provides a connection to the Glenside SEPTA rail station just outside the Township in Cheltenham Township. The route passes by SPS Technologies, which is a large employer in the Township, as well as a fitness center, and several other commercial properties. Highland Avenue extends south to Cheltenham Township and could be a good connection point to the future Tookany Creek Trail. Due to the existing width of Highland Avenue, bike lanes and associated signage are proposed for this route.



Simple bike signage can increase awareness with automobile drivers, while providing a wayfinding system for the trail network. The photos simulations display how the signs can be placed onto existing signs or independently.

Route #7 – Easton Road Cross Township Bike Route (Cheltenham Township to Upper Moreland Township)

Easton Road is one of the main thoroughfares through the Township. The roadway creates links to many commercial and retail establishments as well as Copper Beech Elementary School and Grove Run Dog Park. The route serves as another cross connection through the Township as it connects Cheltenham Township to the Willow Grove Park Mall and the Willow Grove rail station just across the Township border in Upper Moreland. Because of the heavy traffic in the area, this route is proposed as a “share the road” or “use full lane” route with signage only and is intended to be used by experienced cyclists only.

Route #8 – Edge Hill to Valley Bike Route (Edge Hill Road to Valley Road)

This route along Chester Avenue and Meadowbrook Road is a popular biking route for area cyclists. The roadway contains some steep topography but is generally straight with good sight lines. The route





provides a connection from Edge Hill Road to Valley Road and also connects to Meadowbrook School, Jackson Park, and the Boy Scout Game Preserve. This route is proposed as a share the road route with signage only.

Route #9 – Grovania Avenue and Keith Road Connector (Roslyn Station to Old York Road)

This connection links the Roslyn Station to the Abington Library and Old York Road. The route also provides connections to Briar Bush Nature Center and the adjacent residences as well as Highland Elementary, Abington Memorial Hospital, and the Abington YMCA. This route can also provide an alternative to Edge Hill Road and steep topography on Rockwell Road. Because Grovania Avenue is a low volume residential Road, this route is proposed as a share the road route with shared lane pavement markings and signage. The short segment through Briar Bush Nature Center is currently made of compact earth surface. It is suggested that this segment be improved to an accessible and bicycle friendly surface such as crushed aggregate or boardwalk. This improvement will need to be coordinated with Briar Bush staff as bicycles are currently not permitted in the park. Additionally, Keith Road currently does not intersect with Highland Avenue on the southern approach. An agreement with Abington Memorial Hospital would be needed to modify the existing sidewalk in order to allow cyclists and pedestrians through access to Highland Avenue.



Route #10 – Penn State Loop (Huntingdon Road to Meadowbrook Road)

This route, while steeply sloping in some areas, is another popular route for runners and bicyclists in Abington. The route provides linkages to the Penn State Abington campus as well as Valley Road, Jackson Park, and Meadowbrook School. The route is proposed as a share the road route with shared lane pavement markings and associated signage. Segment 10A is an off road trail segment through Penn State property and connecting to the Abington School District athletic facilities. It is anticipated that this trail will eventually be extended to provide bicycle and pedestrian access from the new Penn State residence halls that are planned on Old York Road across from Canterbury Road.

Route #11 – Edge Hill Woods Connector (Jenkintown Road to Edge Hill Woods)

Despite its steeply sloping topography, Edge Hill Woods serves as an interesting passive recreational destination within the Township. The property contains an old residential estate driveway that extends throughout the property and could be used as a short bicycling or walking route. Route #11 is proposed as a share the road route with signage only along Kelly Lane that connects Jenkintown Road to Edge Hill Woods.



Route #12 – Fairway Bike Route (Jenkintown Road to Valley Road)

This route provides a good connection from the existing bike lanes on Valley Road to Keswick Village and beyond to Jenkintown Road. The Fairway has a width of approximately 55 feet which includes the center median. This width can accommodate the addition of 5' wide bike lanes. Baeder Road is also relatively wide with an approximate width of 33' with some street parking. This plan recommends shared lane markings and signage for this route. Baeder Road could also accommodate bike lanes if street parking were prohibited. Keswick Avenue, west of Keswick Village is also very wide and could accommodate bike lanes. This route also provides a connection to the Noble SEPTA station.

Route #13 – Keswick Village to Abington High School Connector (Mount Carmel Avenue to Highland Avenue)

Keswick Village is one of the many important destinations in the Township. The village has many attractions including retail shops, banks, restaurants, community services, and a theatre. This bicycle route links the Abington High School campus to Keswick Village and Mount Carmel Avenue. The route along Keswick Avenue and Abington Avenue are proposed as share the road routes with shared lane pavement markings and signage. It is proposed that the Township coordinate with Abington School District to construct a shared use path on the south side of Ghost Road and along the northern side of Highland Avenue with a crossing at Canterbury Avenue.



Keswick Village

Route #14 – Noble to Pennypack Connector (Noble Station to Rockledge Borough)

This important connection links the Noble Station near the center of the Township to the Cedar Road and Rockledge Borough. The route also makes connections to the Abington Friends School, Abington Art Center, Alverthorpe Park, Manor College, and Saint Basil Academy. This route combines both shared use paths and share the road routes with pavement markings and signage and provides one of the best opportunities for an extensive low stress route within the Township.

Vernon Road and Spring Avenue are low volume one-way roadways in a northern direction while Upland Avenue and Newbold Road are one-way roadways in a southerly direction. The bicycle routes on these roads are also proposed as one-way. A shared use path is proposed from the end of Newbold Road along the Abington Friends School property adjacent to Greenwood Road, through the Abington Art Center to the existing asphalt path along Fox Chase Road on the northeast side of Alverthorpe Park and Manor College. An extension of the existing trail is also proposed at the other end of this existing path to the east along the Manor College property to create a connection to Cedar Road and Rockledge Borough. Further coordination with the Art Center and Manor College will be needed for implementation of these shared use paths extensions.

Route #15 – Abington Schools Trail (Easton Road to Ghost Road & Keith Road)

Safely connecting students to area schools is one of the primary goals of this plan. The Abington High school campus contains three schools (Abington High School, Abington Junior High School, Copper Beech Elementary) making it the most active school site in the Township. This route enhances the connections to these schools from Highland Elementary School, Easton Road, Highland Avenue, Abington Avenue, and Keith Road. Due to the heavy bus, student, and faculty traffic, it is proposed that this route be constructed entirely as a shared use path within the Abington High School campus. It is proposed that the shared use path run along the north side of the main vehicular driveway, along the existing field hockey fields and to the north of the stadium connecting to Copper Beech Elementary School to Easton Road. Further coordination



Ghost Road

with Abington School District will be needed prior to implementation of this route. The route also provides a connection to Baederwood Park across Ghost Road.

Route #16 – Old Huntingdon Trail (Valley Road to Pennypack Trail)

This important connection connects bicyclists from the existing Valley Road bike lanes to the Pennypack Trail. Because Moredon Road, east of Huntingdon Pike, contains steep slopes and sharp curves that do not allow for safe bicycle travel to the Pennypack Trail, it is suggested that this route be prioritized to connect users from Moredon Road to the existing trailhead at the end of Old Huntingdon Pike. Several other alternatives have also been proposed by this plan to access the Pennypack Creek in this quadrant of the Township.

Along this route, it is recommended that bike lanes be installed along segment 16C (Huntingdon Pike) to the signalized intersection at the Holy Redeemer Hospital. Segment 16D is proposed as either a two-way cycle track or side path along the south side of Huntingdon Pike to link users from the intersection at the Hospital to Old Huntingdon Pike. This segment will need to be further analyzed and engineered prior to implementation. An alternative to a cycle track or side path at segment 16D is to provide bike lanes along the entire length of Huntingdon Pike from Moredon Road to the signalized intersection at Meadowbrook Drive.

The segment on Old Huntingdon Pike is proposed as shared lane pavement markings and “share the road” signage. With just three properties that front Old Huntingdon Pike, any potential conflicts or disturbance from an on-road bicycle route would be minimal or non-existent.

Other lower priority alternatives to connect to the Pennypack Trail in this area of the Township are segments 18 and 20 as described later in this report.

Route #17 – West Avenue (Newbold Road to Jenkintown Station)

The Jenkintown SEPTA station is listed as the 6th most active regional rail station behind only Suburban Station, Market East, 30th Street, University City, and Temple. SEPTA identifies the Jenkintown Station as having 1,998 total weekday boardings and 1,660 total weekday alightings per week. Because of the amount of activity, this station was identified



Huntingdon Pike



Old access road in the Sisters of the Holy Redeemer Property

as an important point of connection for this Bicycle Master Plan. West Avenue serves as the most direct route from Walnut Street and the downtown business district of Jenkintown to the station. Jenkintown High School, Middle School and Elementary School also lie on West Avenue. The route is proposed to have shared lane pavement markings and share the road signage.

Route #18 – Moredon Trail (Moredon Road to Pennypack Trail)

This route, through a property owned by Sisters of the Holy Redeemer is recommended as a second alternative to access the Pennypack Trail in the eastern quadrant of the Township. This very large property contains an existing gravel road and a significant amount of open space that could accommodate a public trail without much disturbance to the property's existing activity. Further discussion with the Sisters of the Holy Redeemer as well as an easement or agreement is needed to implement this segment.

Route #19 – Crosswicks Connector (Jenkintown Road to Crosswicks Bird Sanctuary)

This connection links bicyclists to several important destinations in the southeastern quadrant of the Township. Forrest Avenue links to Jenkintown Road and also runs by the main access gate to Alverthorpe Park. The route also provides access to the multiuse trail along Alverthorpe Park and Manor College and the Crosswicks Bird Sanctuary. The Township should take advantage of the existing pedestrian only access from Meetinghouse Road to Crosswicks Road. In order to formalize this access as a bicycle route, improvements to this intersection to include bicycle and pedestrian crossings will be needed. These segments are proposed to be shared lane pavement markings and share the road signage.

Route #20 – Meadowbrook Trail (Valley Road to Lower Moreland Township)

It is proposed that this shared use path will utilize the Meadowbrook Golf Club property, Montgomery County owned property, as well two undeveloped parcels that are privately owned in order to access the Pennypack Trail. It is anticipated that the privately owned parcels will

soon become developed and that portions of this trail connection could be implemented as part of the plan. The Township should continue to coordinate with Montgomery County as to the status of this possible connection. Should the golf course ever become redeveloped it would be beneficial to include an off road trail from the Meadowbrook Station along the rail line to the Pennypack Trail as part of the redevelopment plans.

Route #21 – Rydal Trail (Crosswicks Avenue to Mill Road)

Route 21 provides a connection across the Township from the Crosswicks Bird Sanctuary to Moredon Road. The route also links cyclists to Rydal East Elementary and St. Hillary of Poitiers School. This route is proposed as a combination of shared roadway with signage only, shared roadway with shared lane markings and signage, as well as a short off road path. Pembroke Road is proposed as a shared lane with pavement markings and share the road signage. The off road path is proposed to connect Pembroke Road (at Clarendon Road) through the Saint Hilary of Poitiers School property to Susquehanna Road. It is proposed that the route utilize the existing trail on home owners association land to connect to Rydal East and Rydal West schools. Dale Road is proposed as a share the road route with shared lane pavement markings.

Route #22 – Sunset Connector (Jenkintown Borough to Alverthorpe Park)

This short, but important connection links area residents to The Pavilion Shopping Center, Abington Club, Alverthorpe Park, and Jenkintown Borough. Shared lane pavement markings and share the road signage are proposed along this route as Evergreen Road and Sunset Avenue are low volume residential roadways. Intersection improvements are also needed at the intersection of Jenkintown Road and Evergreen Road in order to ensure safe crossing to and from Alverthorpe Park and the Abington Art Center.

Route #23 – Pennypack Connector (Jenkintown Road to Pennypack Trail)

Cedar Road was identified as a popular biking route from Jenkintown Road to Manor College and Fox Chase Road. This route also makes a

connection to the Huntingdon Valley Shopping Center. This segment is proposed as a share the road route with shared lane markings and links Jenkintown Road and the off road trail along Manor College property to the Pennypack Trail. Cedar Road and Rockledge Road are proposed as routes with share the road signage only. Sherman Avenue and Mankin Avenue are proposed as routes with shared lane pavement markings and share the road signage.

Route #24 – Southern Connector (Forrest Road to City of Philadelphia and Cheltenham Township)

Route 24 is proposed to connect Manor College and McKinley School to Burlholme Park in the City of Philadelphia and also to Church Road in Cheltenham Township. The route also provides a link to Montefiore Cemetery and Lawnview Memorial Park. The route proposes a series of shared roadways with shared lane markings and signage along Shelmire Street and Church Road.

Trailheads and Amenities

Eight (8) trailheads have been proposed and are shown on the Trails Map at the end of this chapter. Locations for these trailheads include Crestmont Park, Roslyn Park, Penbryn Park, Roy-Chester Park, the Abington High School campus, the Abington School District athletic facility at the intersection of Susquehanna Road and Huntingdon Road, Abington Art Center, and the Huntingdon Valley Shopping Center. It is proposed that all of these trailheads will utilize existing parking areas. Signage should also be installed to identify these areas as official trailheads. Amenities such as trash and recycling receptacles, covered bicycle parking, and public restrooms should be considered as appropriate. Two existing trailheads exist at Lorimer Park and at the end of Old Huntingdon Pike. Covered bicycle storage should also be considered at prominent destinations such as Keswick Village, Willow Grove Park Mall, downtown Jenkintown, Alverthorpe Park, and schools.

SEPTA Rail Stations

Because Abington Township is in a unique geographic location that contains five regional rail lines and 12 rail stations, continuous



coordination and partnership with SEPTA is vital to the success of this plan. It is recommended that Abington officials maintain contact with SEPTA as portions of the plan near rail stations are implemented. As bicycle infrastructure around the stations is improved, SEPTA will need to reevaluate the stations in terms of existing and anticipated bicycle usage to update station upgrade and bicycle infrastructure priorities.

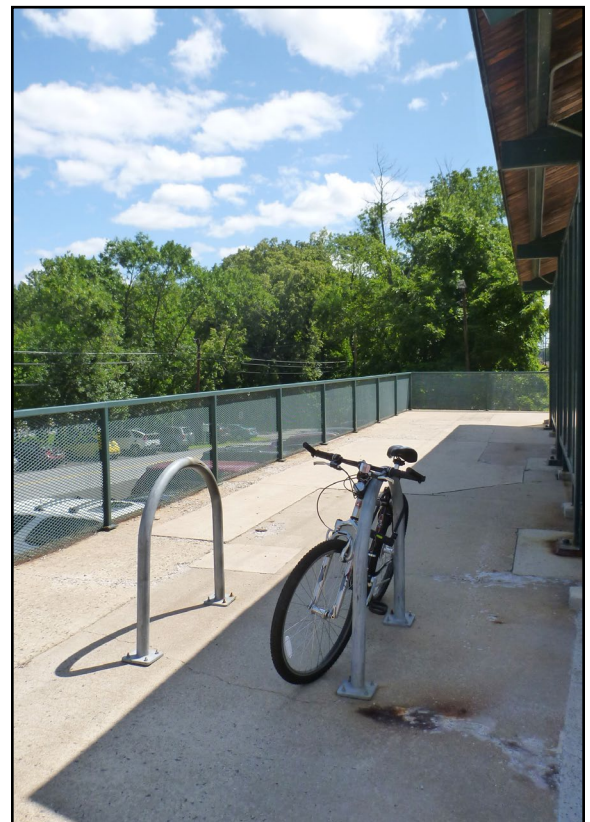
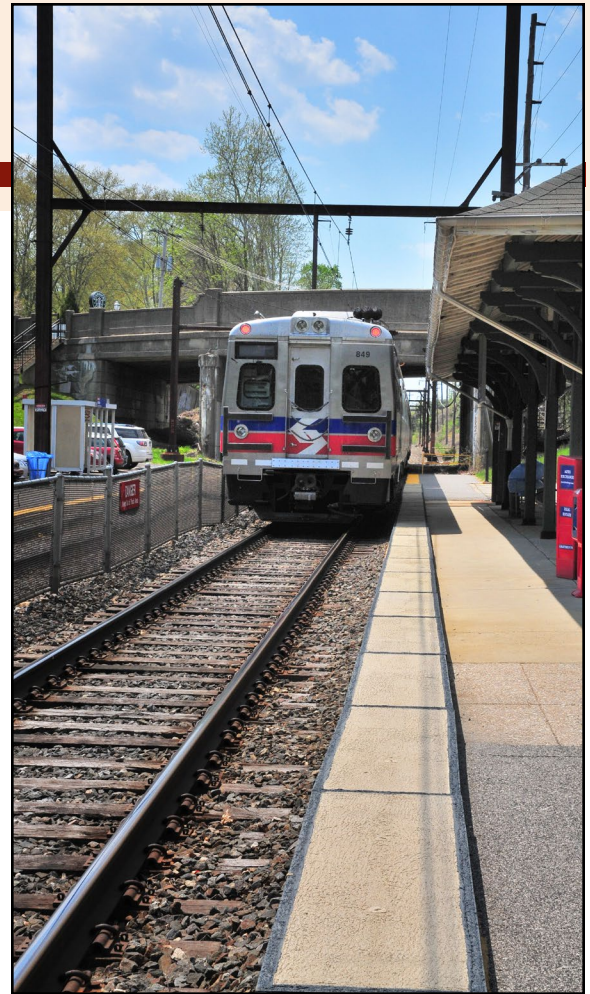
Potential improvements to that may be required as bicycle usage at stations increases includes covered bicycle parking, stair bicycle runners, and appropriate signage. It is recommended that the Township coordinate with SEPTA to place the Abington Bicycle Master Plan map at all stations in and around the Township as well as a map that identifies which segments have been constructed. These maps are meant to inform the public of the bicycle routes available to them and should be periodically updated by the Township as the master plan continues to get implemented.

The space available on SEPTA property for covered bicycle parking is limited some station locations. At the Ardsley Station, the Township should pursue an agreement with the adjacent Hillside Cemetery to allow a covered bicycle parking module on Hillside Cemetery property next to the SEPTA parking lot. At the Crestmont Station, the Township could consider allowing covered bicycle parking on the adjacent Township property (Rubicam Avenue Park).

Regional Connections

The Abington plan proposes to make connections to existing and proposed trails and bicycle routes in most of its neighboring municipalities. As mentioned previously, the Cross County Trail and Tookany Creek Trails are proposed in adjacent Upper Dublin and Cheltenham Townships. This plan proposes two connections to the proposed Tookany Creek Trail and one to the existing Tookany Creek Parkway trail in Cheltenham. The plan also proposes two connections to Upper Dublin Township via Jenkintown Road and Elliot Road. Both of these roads could provide future connections to the Cross County Trail once completed.

A connection to the City of Philadelphia has been on Shelmire Street to Burlholme Park. It is recommended that the Township coordinate with the City to extend the trail through Burlholme Park and down Cottman Avenue to existing bike lanes on Oxford Road and Red Lion Road. Additionally,



Existing bike parking at Meadowbrook Station

the City of Philadelphia has planned to extend the Pennypack Trail to Fox Chase Station. It is recommended that Montgomery County extend the Pennypack trail to the Township line to meet the proposed Philadelphia segment.

Level of Comfort Analysis and Mapping

The proposed network includes a variety of bicycle routes, including some routes that will appeal to a wide range of residents and their families and others that will only appeal to experienced cyclists. The project team has rated each of the proposed routes based on the “level of comfort”, which is an indication of the traffic stress experienced by cyclists. The classification is based upon the Level of Traffic Stress measurement established by researchers at the Mineta Transportation Institute in San Jose, California. Low stress bike routes with minimal traffic conflicts are considered Level of Comfort 1, and routes with the heaviest exposure to traffic are considered Level of Comfort 4.

Level 1: Comfortable for people of all ages and abilities.

- Off-street trails



Narrow Roads with tight shoulders can make for a less comfortable bicycle ride



Grovania Street is a good example of a potential Level 1 bike route.

- Residential streets with traffic speeds of 25 mph or less
- Bike lanes that are at least six feet wide or are physically separated from traffic
- No unsignalized crossings of streets with four or more lanes

Level 2: Comfortable for most adults.

- Residential streets with traffic speeds of up to 30 mph
- Bike lanes that are less than six feet wide
- No unsignalized crossings of streets with speeds above 35 mph

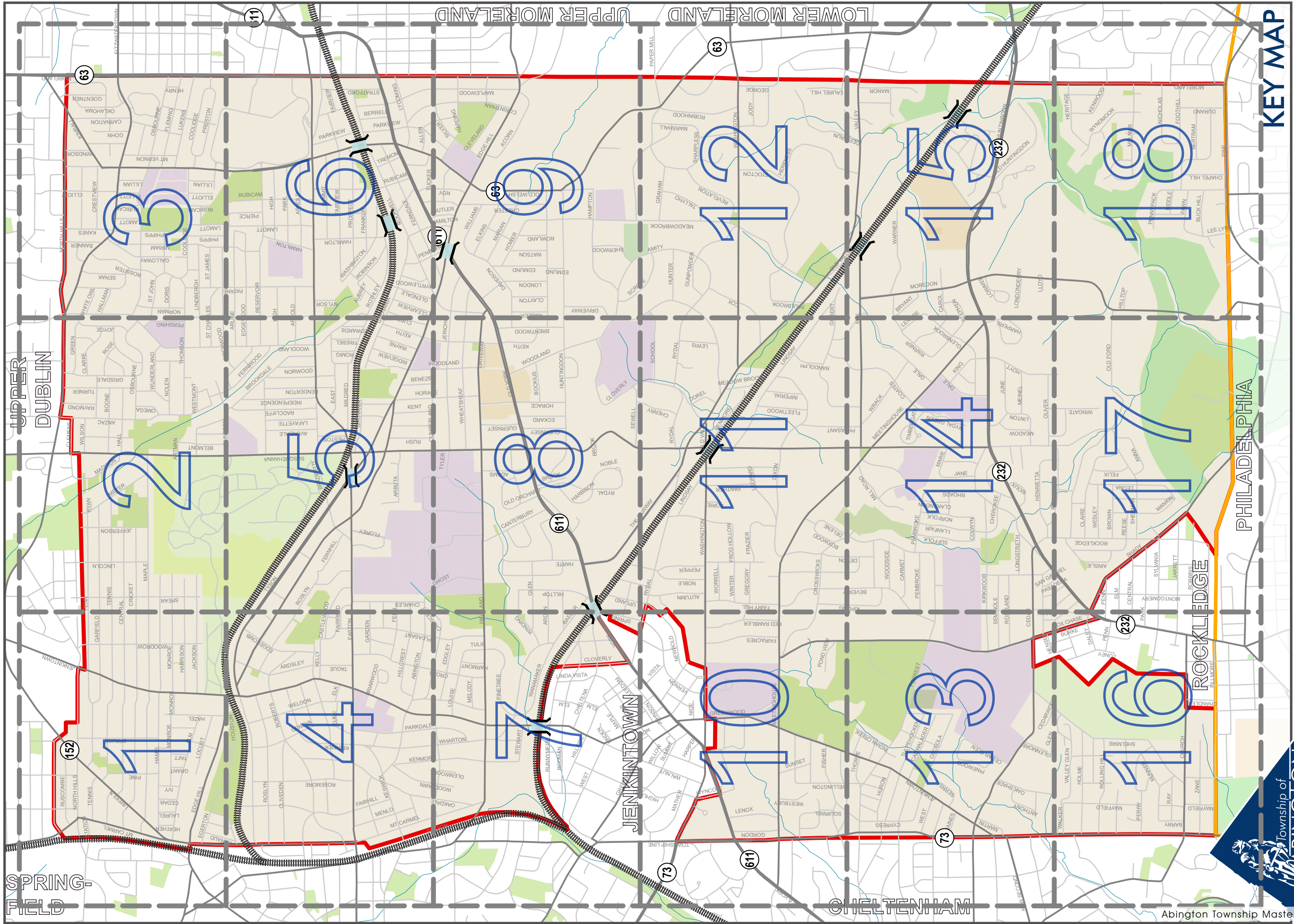
Level 3: Comfortable for many experienced cyclists.

- Streets with no dedicated bicycle facilities and speeds of up to 30 mph
- Bike lanes adjacent to 35 mph traffic
- May include unsignalized crossings of streets with traffic speeds above 40 mph

Level 4: Comfortable for experienced and confident cyclists.

- Two lane streets with no bike lanes and traffic speeds of 35 mph+
- Bike lanes adjacent to 40 mph traffic

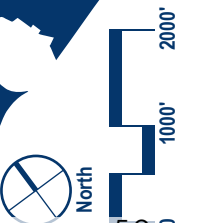
The level of comfort for each route is shown on page 80.



KEY MAP

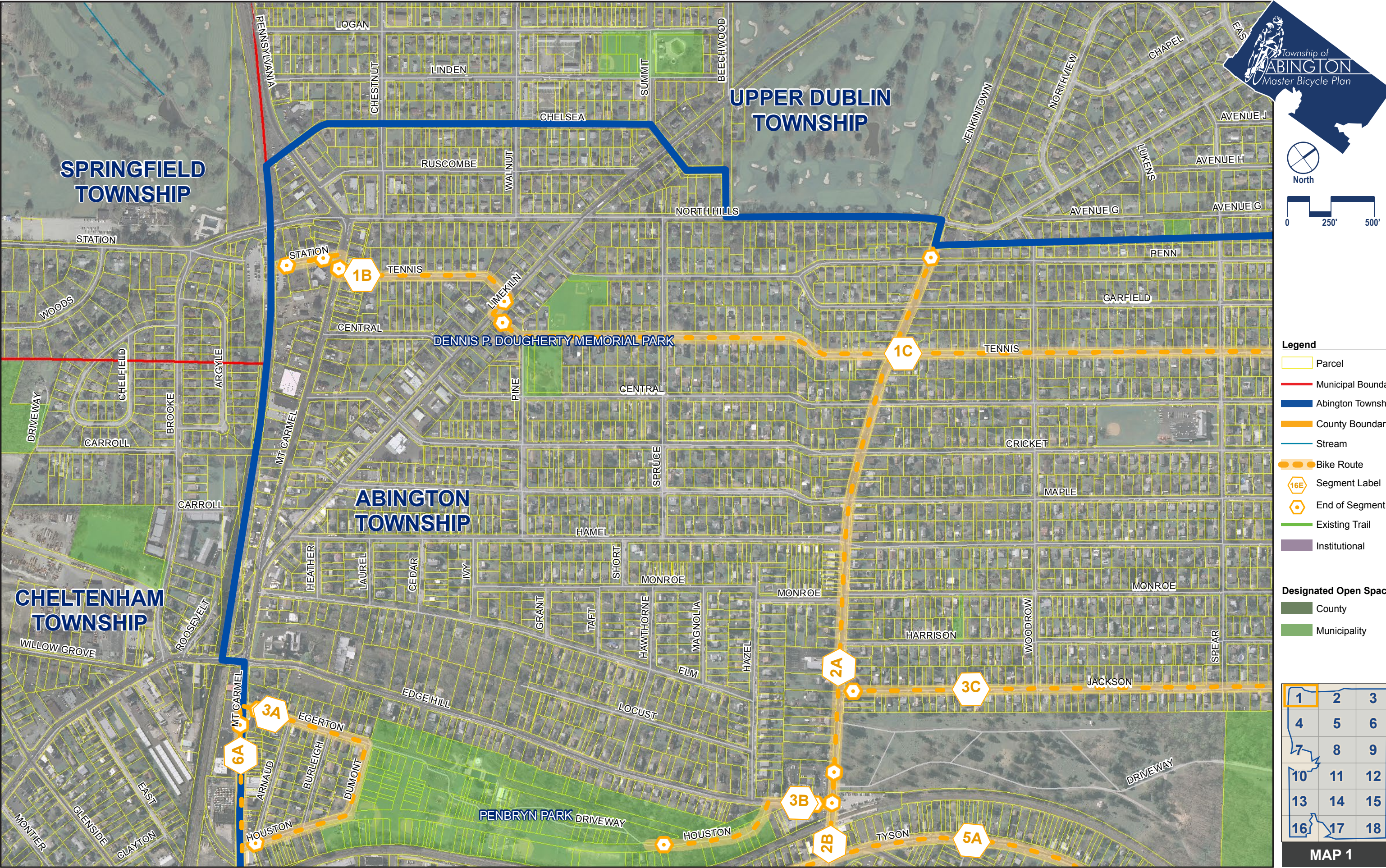
- Park
- Cemetery
- School
- Hospital
- Existing Bridge
- Township boundary
- County boundary

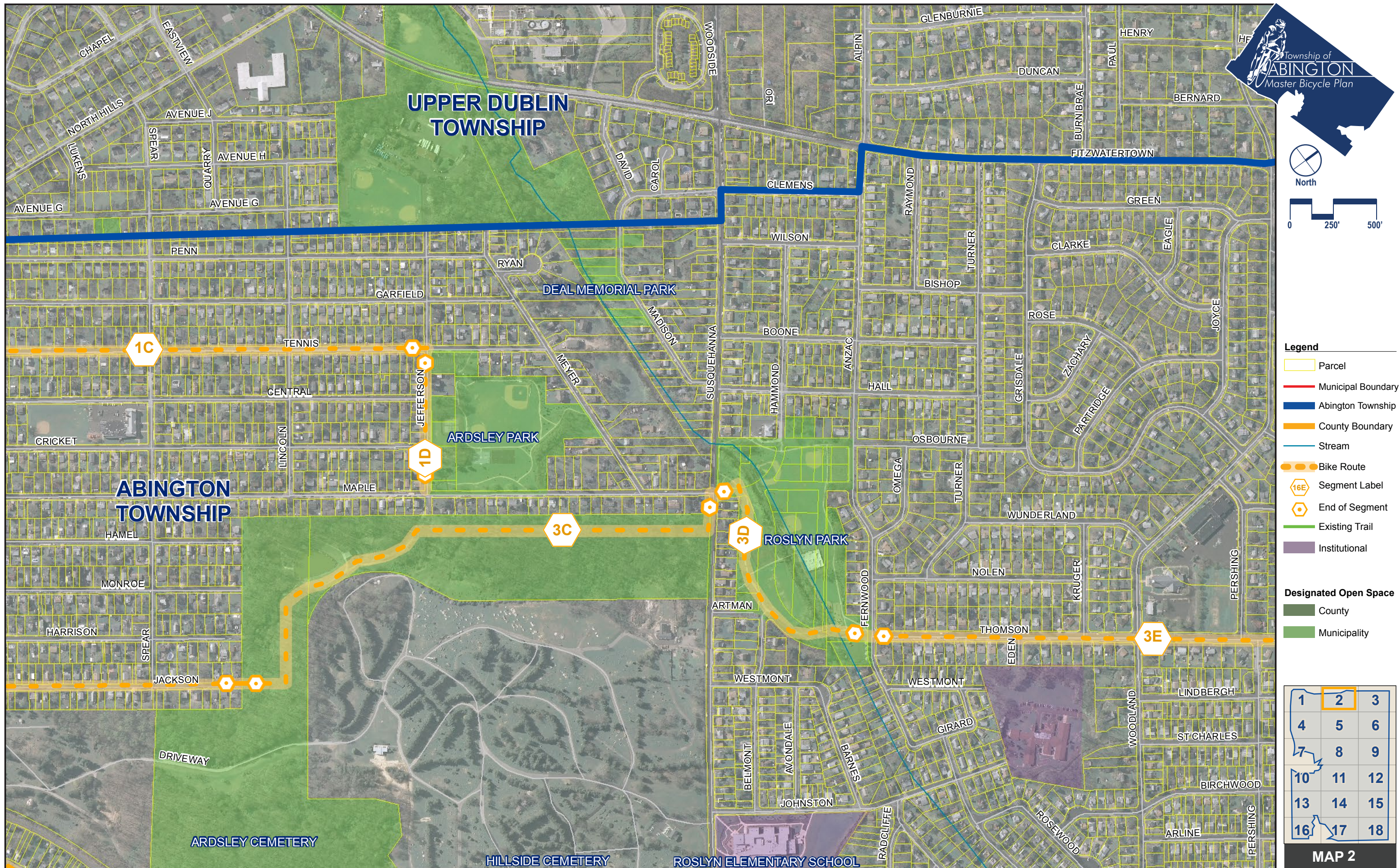
Railroad

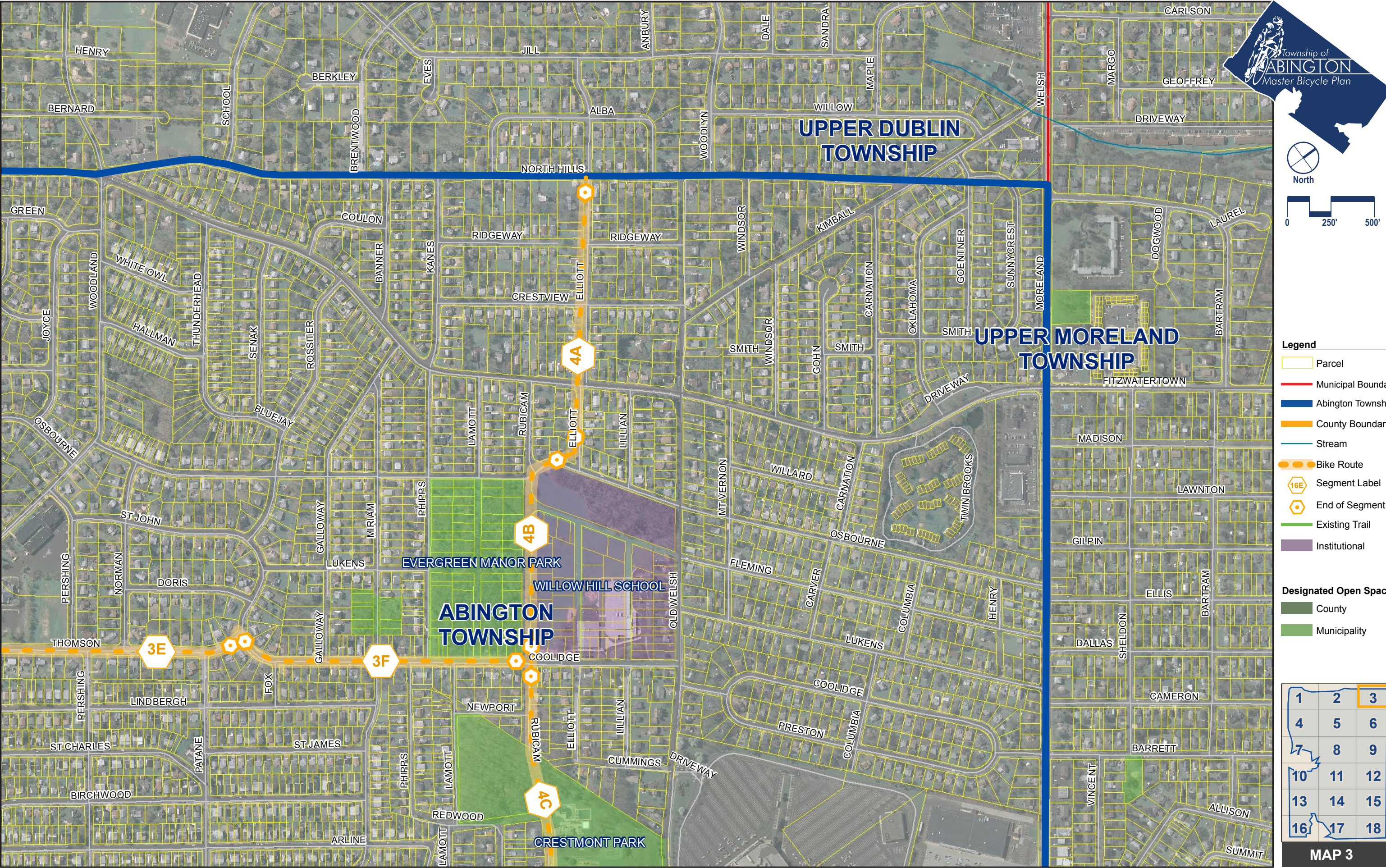


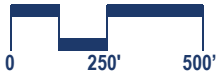
SPRING-FIELD

© ELTENHAM









Legend

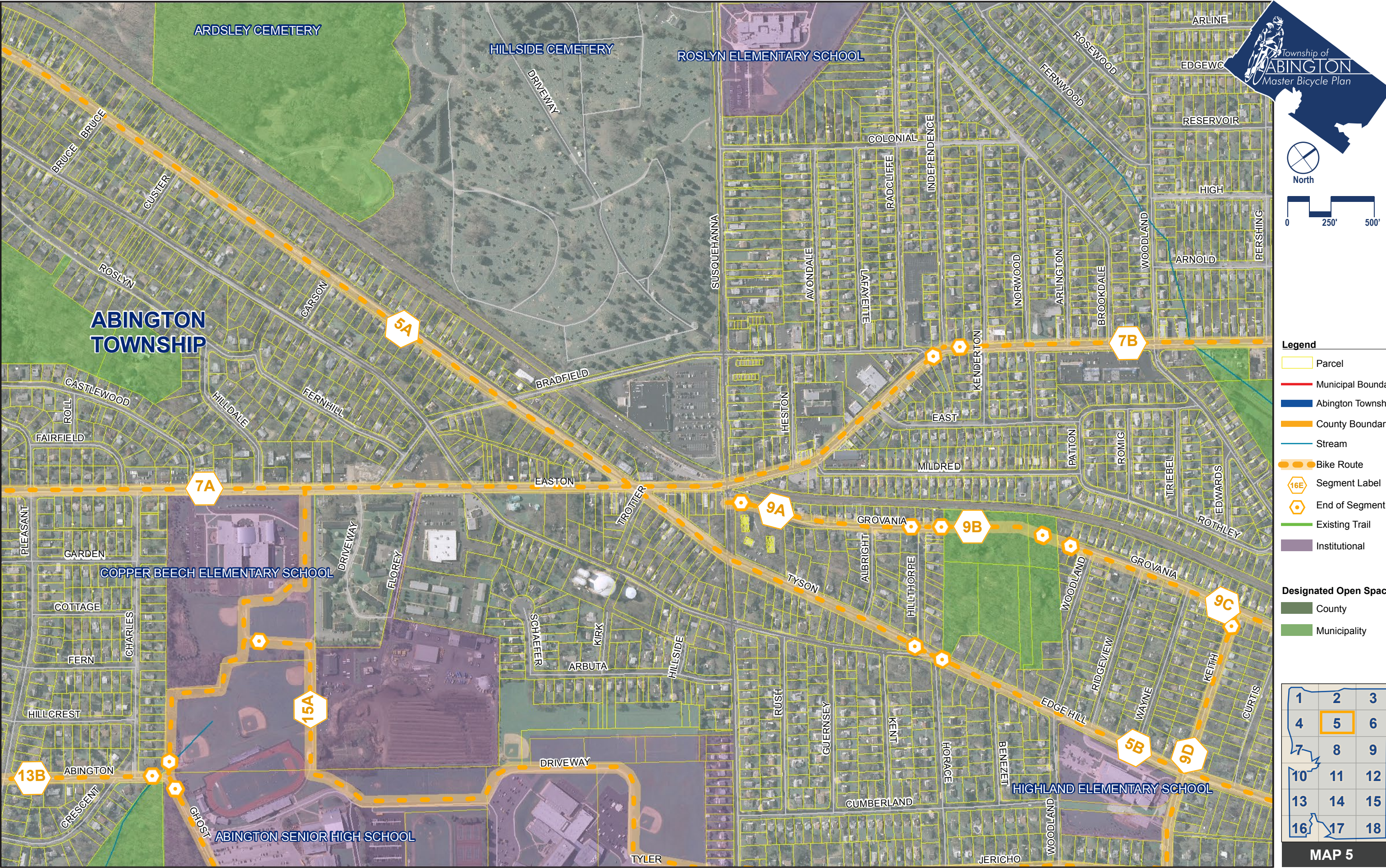
- Parcel
- Municipal Boundary
- Abington Township
- County Boundary
- Stream
- Bike Route
- Segment Label
- End of Segment
- Existing Trail
- Institutional

Designated Open Space

- County
- Municipality

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18

MAP 4





Legend

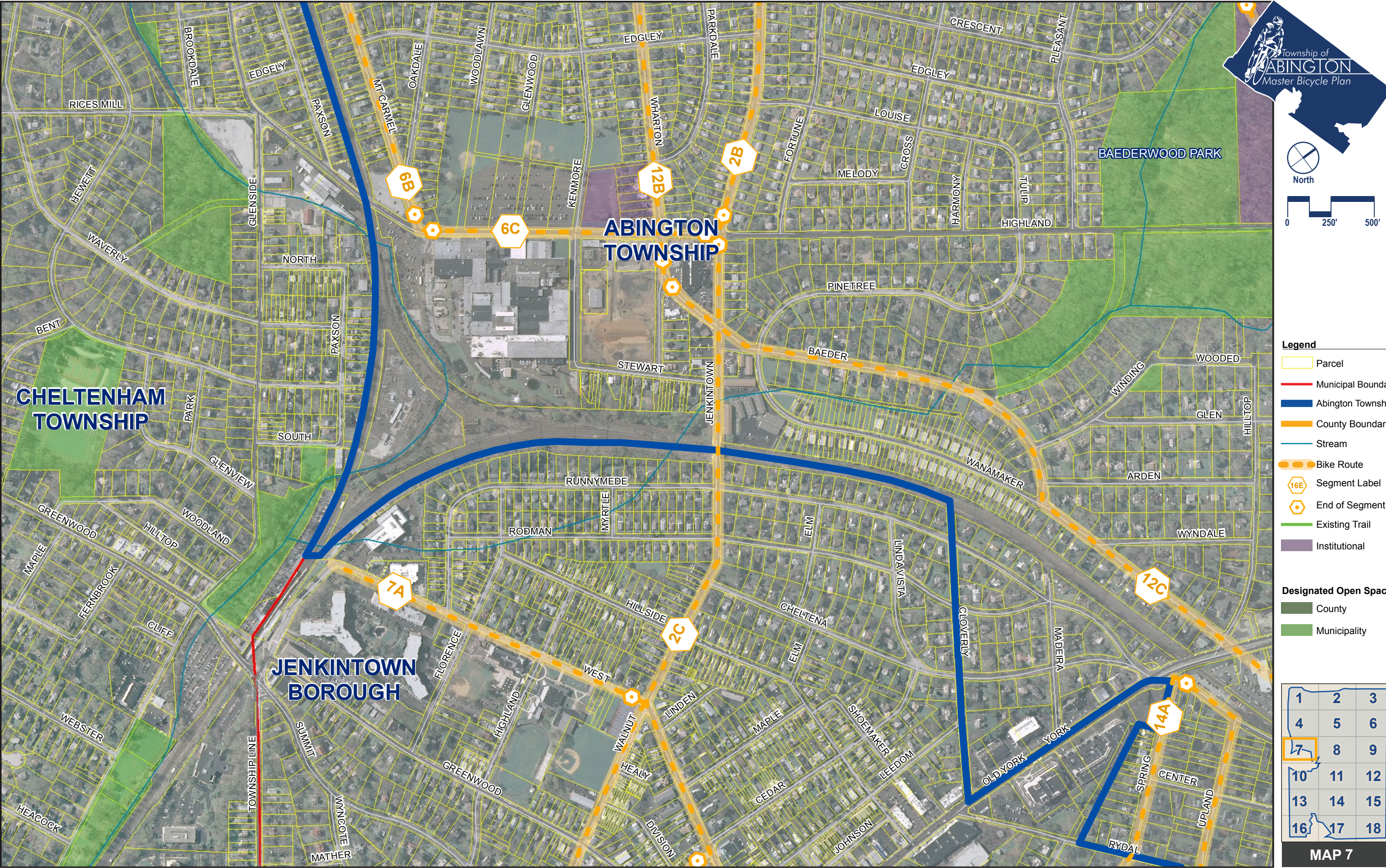
- Parcel
- Municipal Boundary
- Abington Township
- County Boundary
- Stream
- Bike Route
- Segment Label
- End of Segment
- Existing Trail
- Institutional

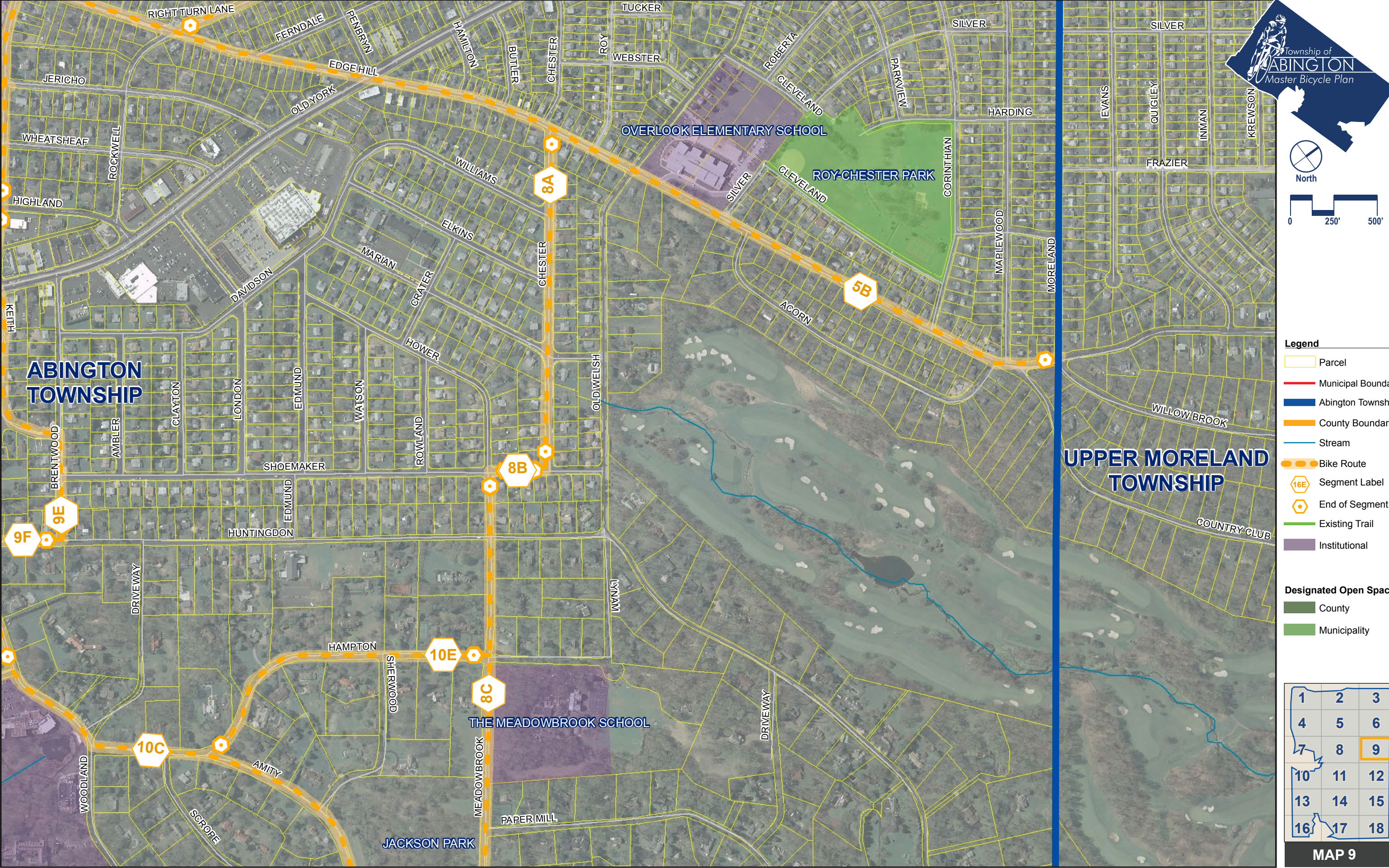
Designated Open Space

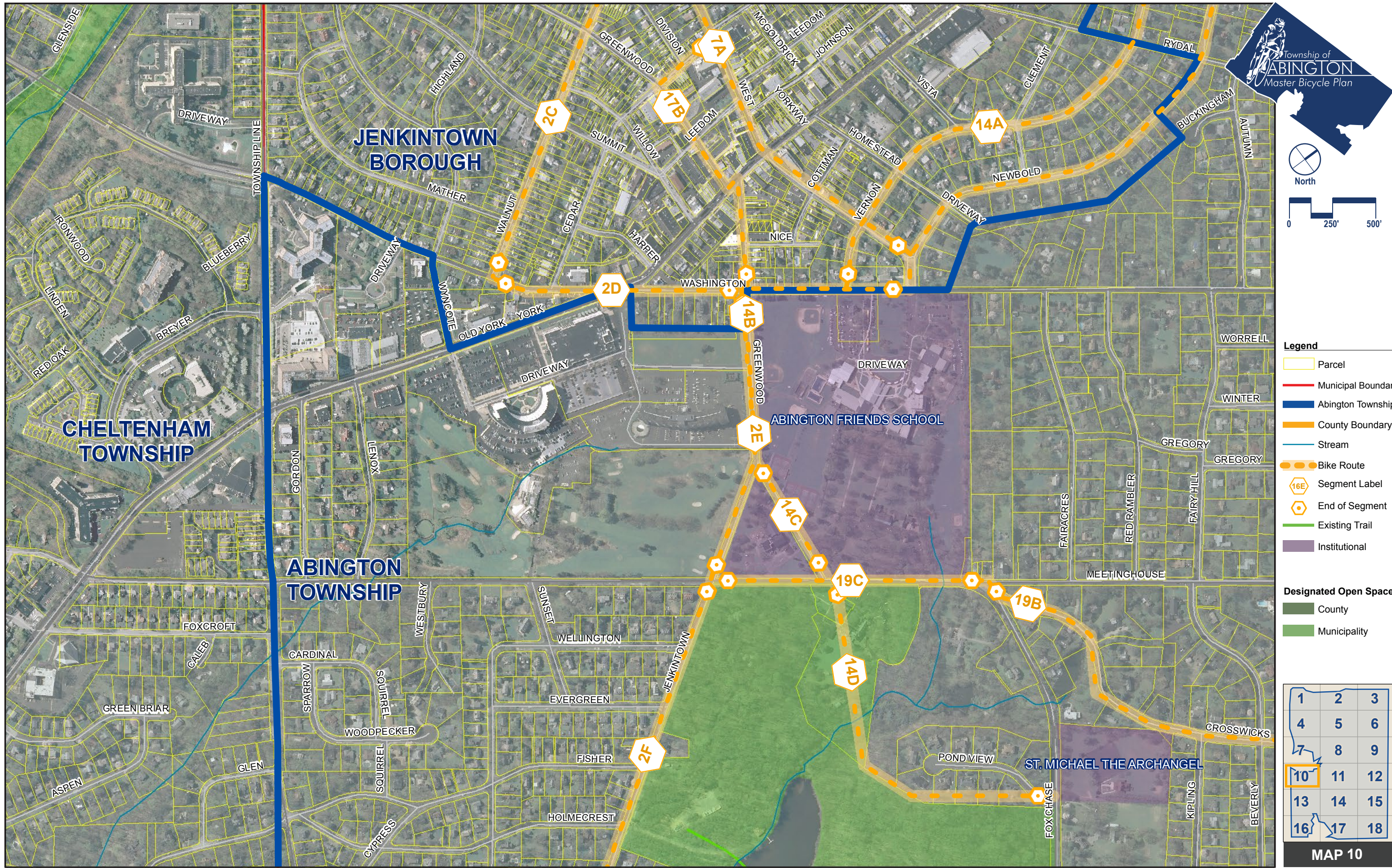
- County
- Municipality

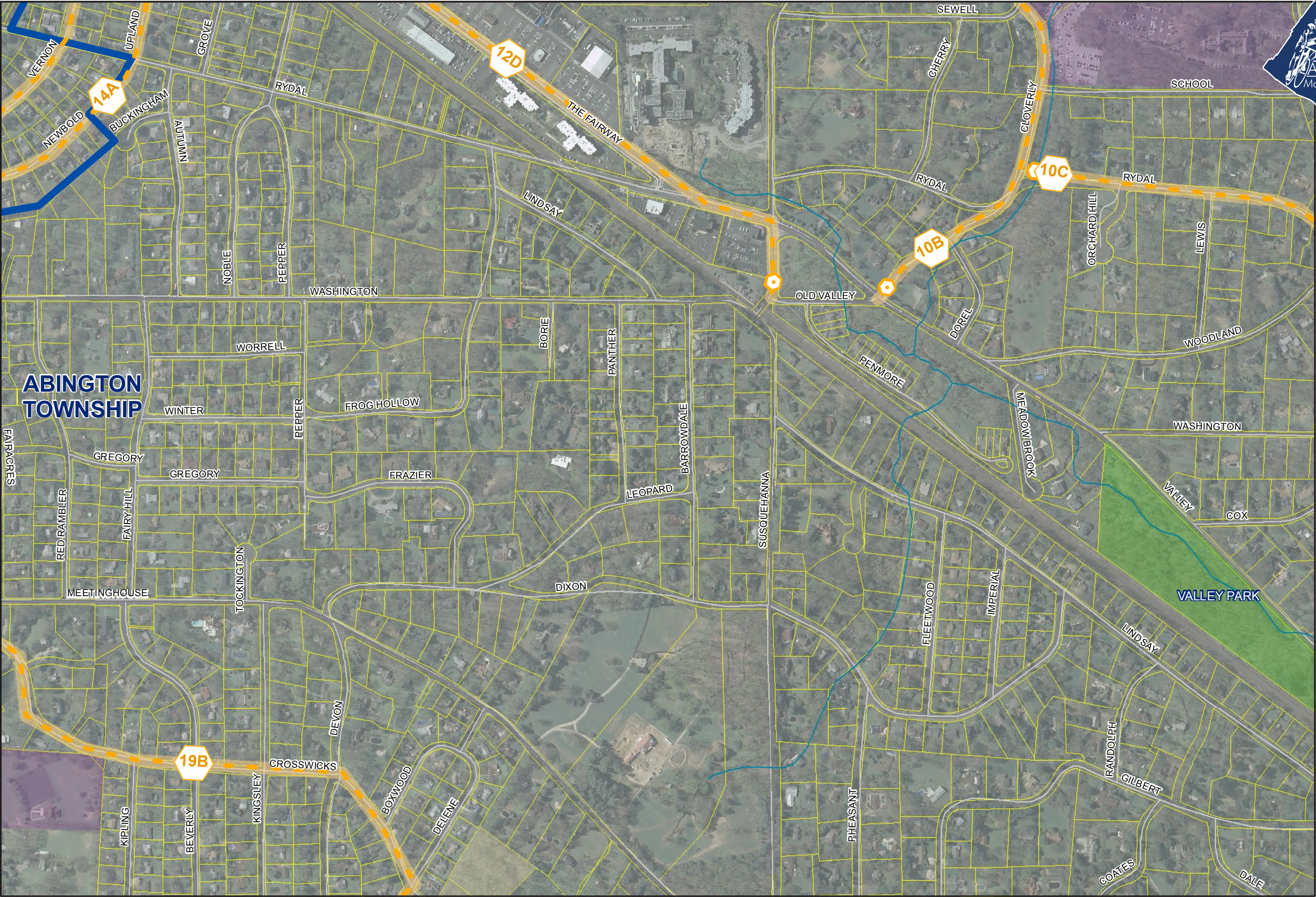
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18

MAP 6









Legend

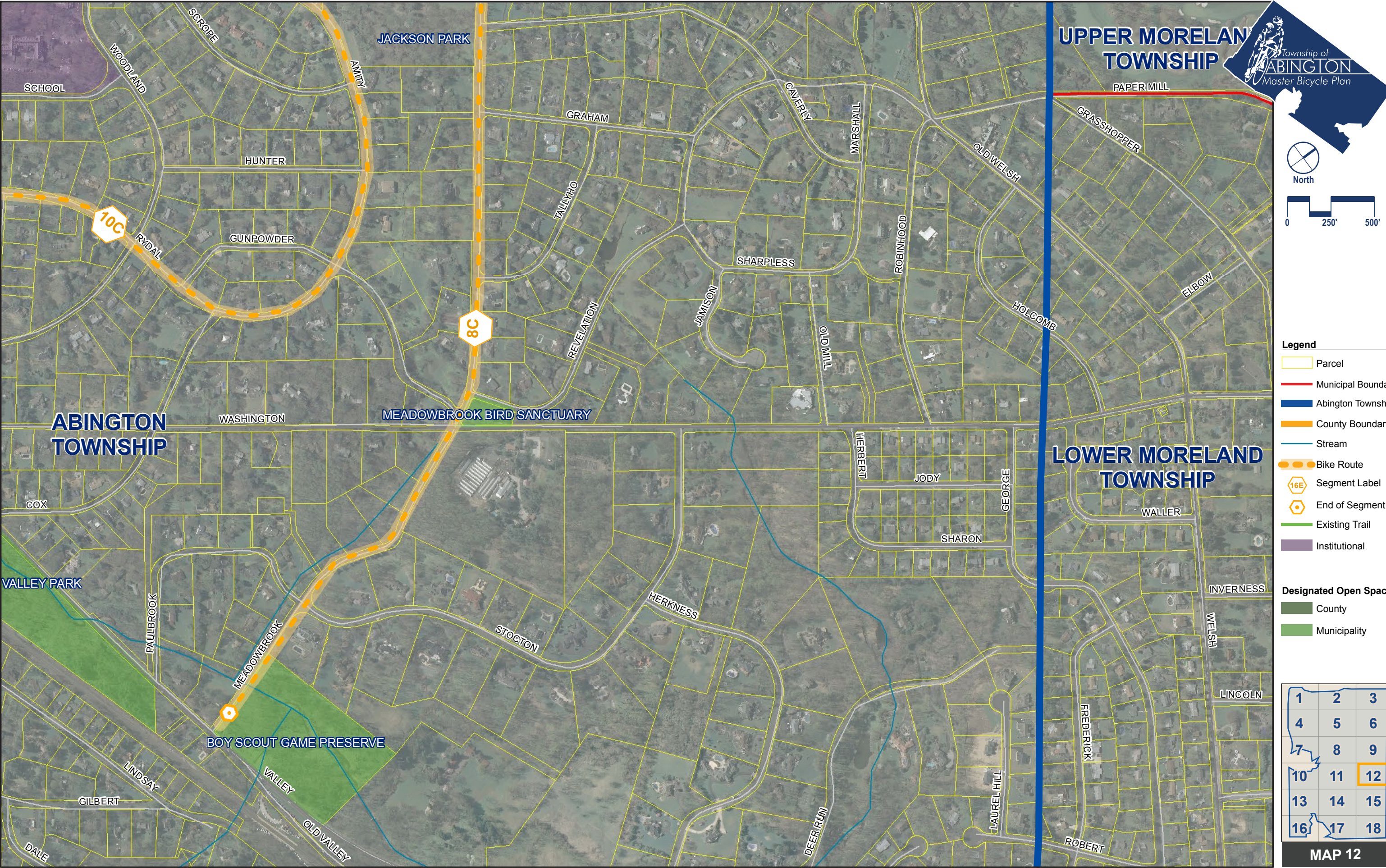
- Parcel
- Municipal Boundary
- Abington Township
- County Boundary
- Stream
- Bike Route
- Segment Label
- End of Segment
- Existing Trail
- Institutional

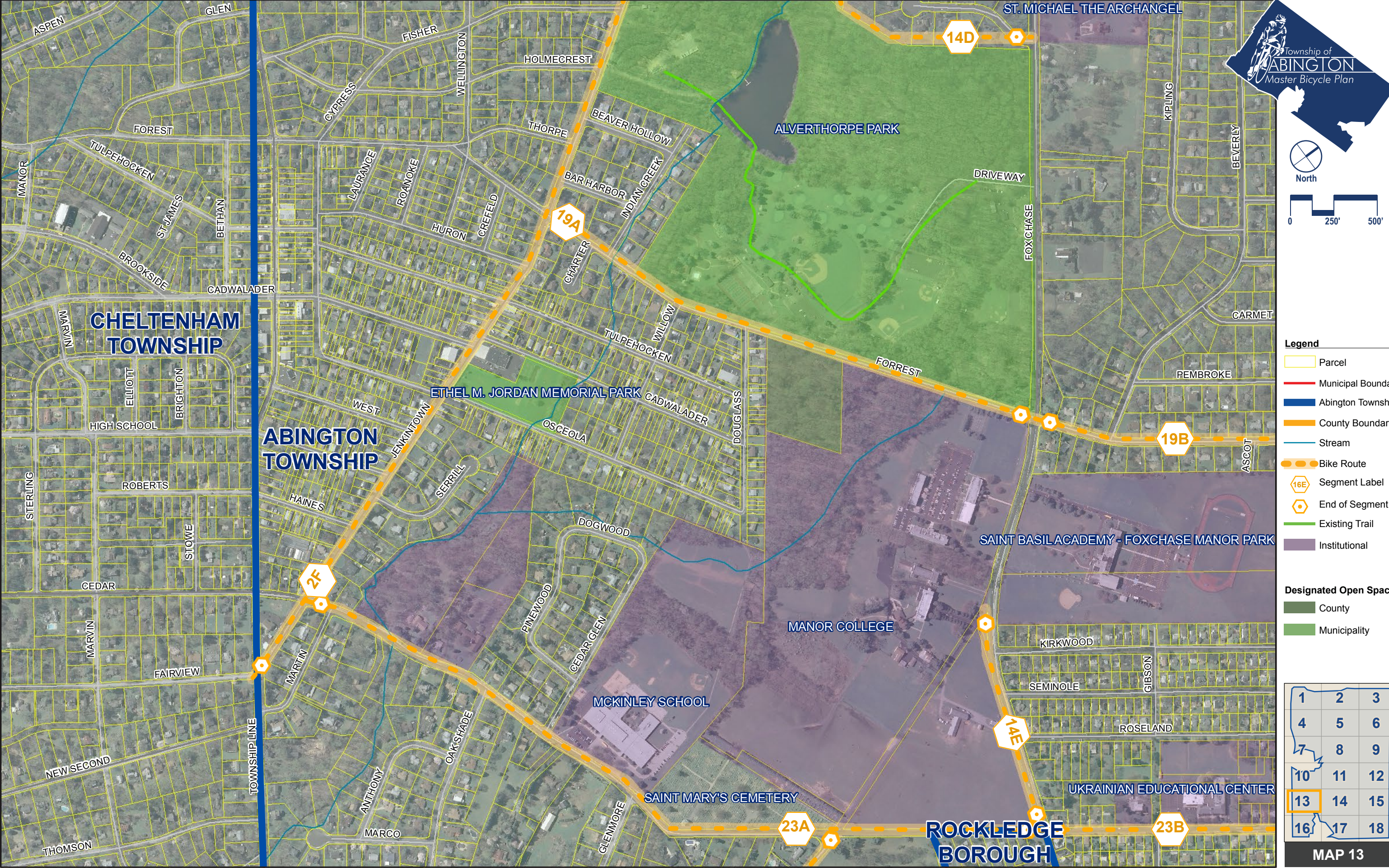
Designated Open Space

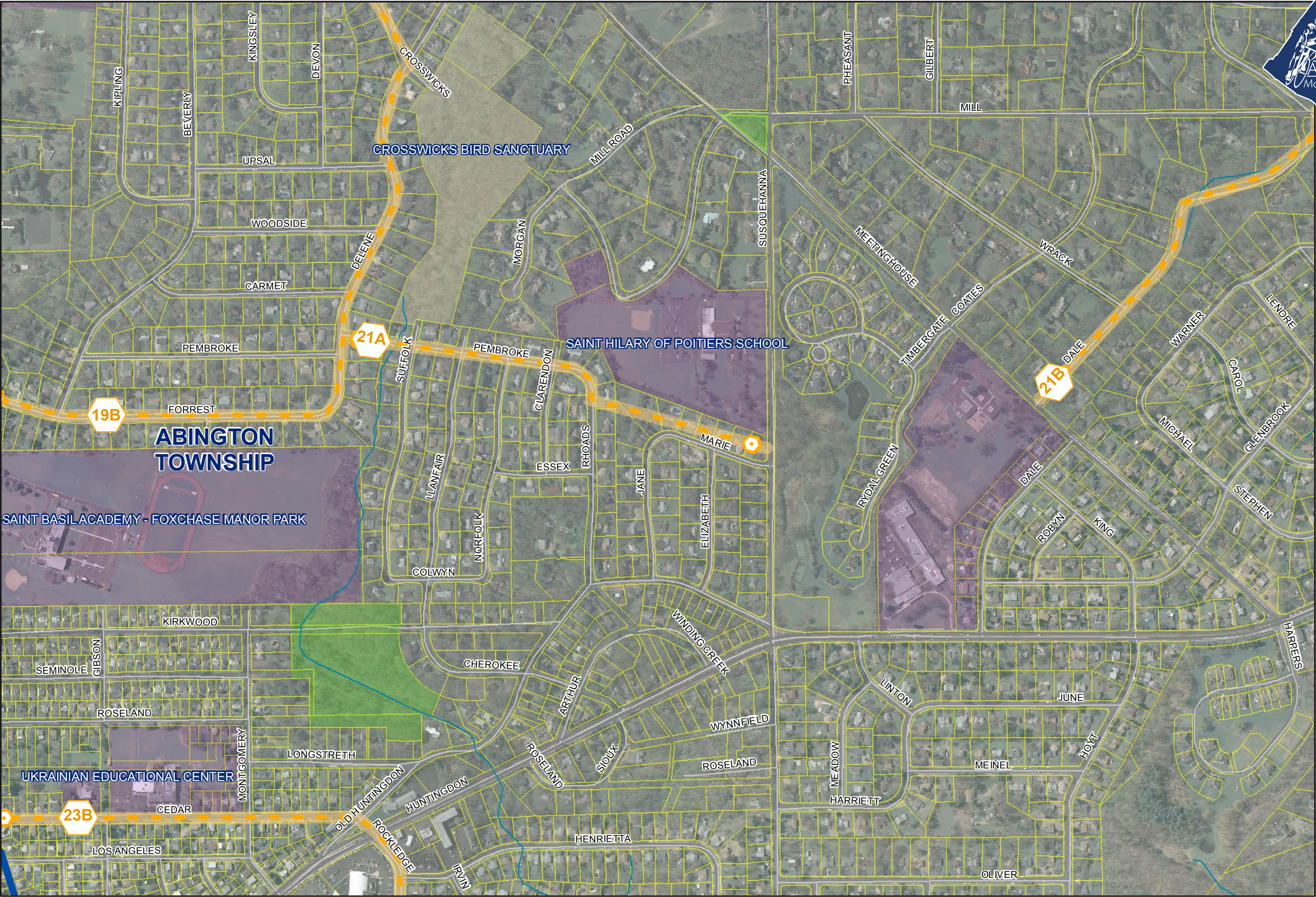
- County
- Municipality

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18

MAP 11







Legend

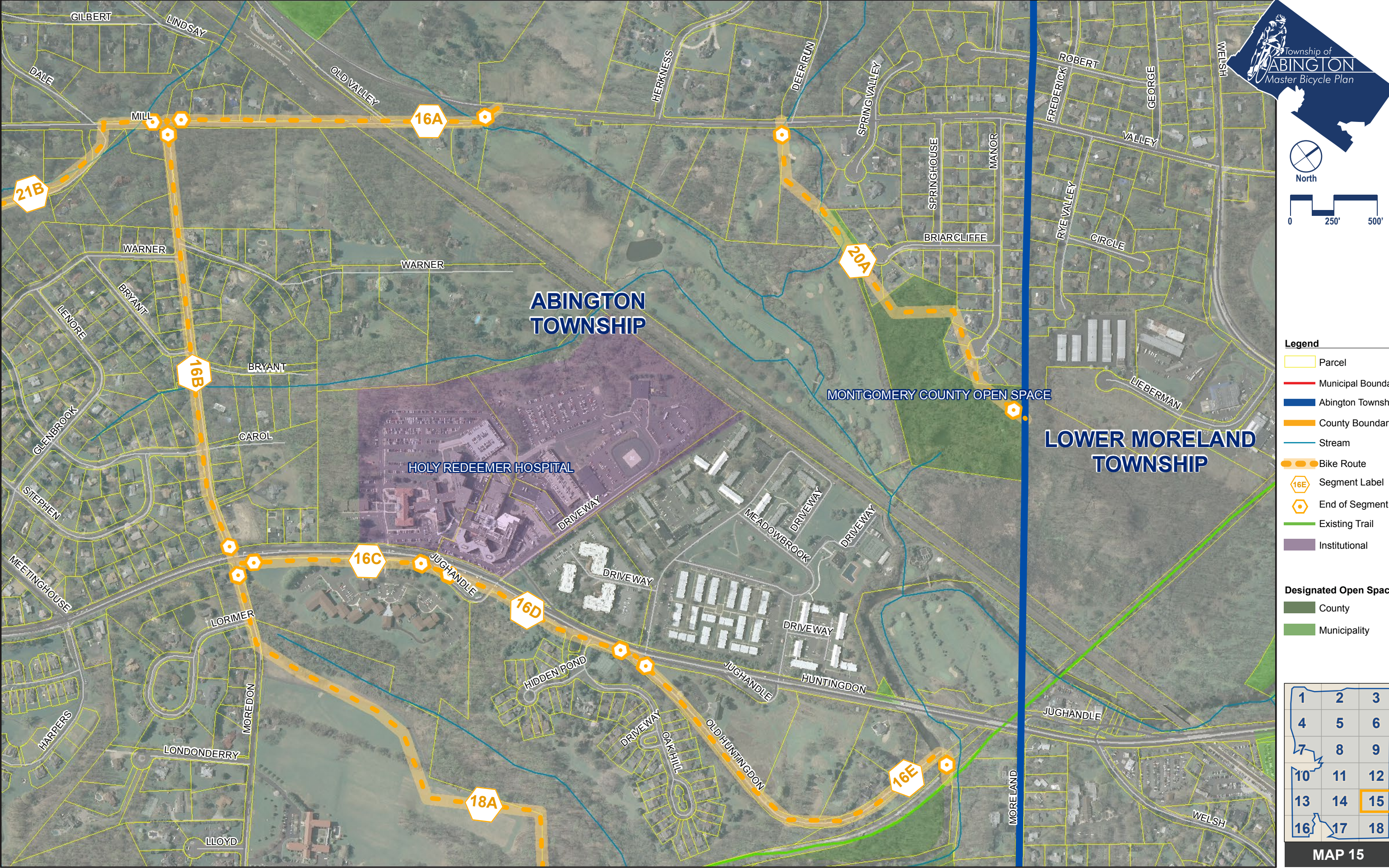
- Parcel
- Municipal Boundary
- Abington Township
- County Boundary
- Stream
- Bike Route
- Segment Label
- End of Segment
- Existing Trail
- Institutional

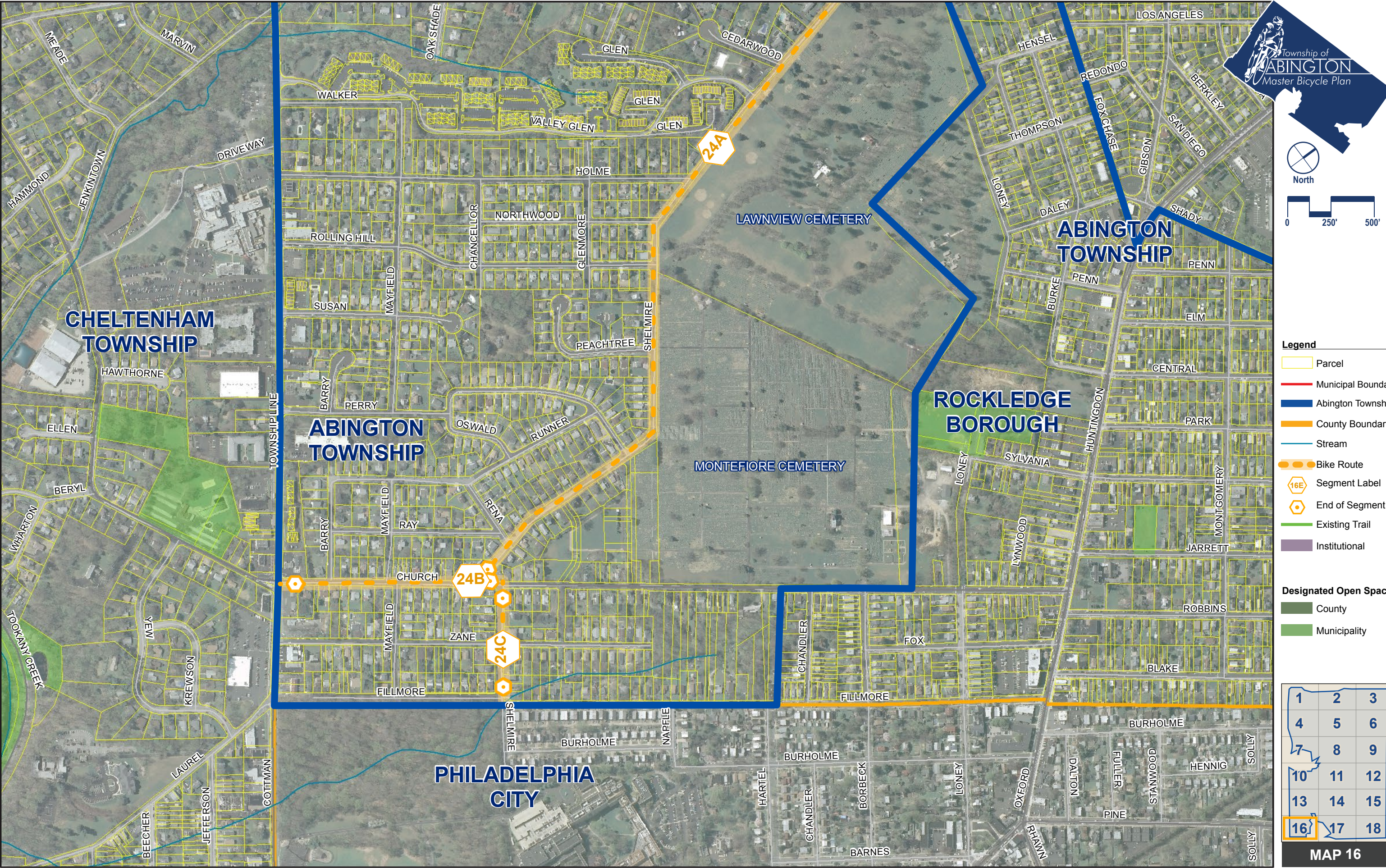
Designated Open Space

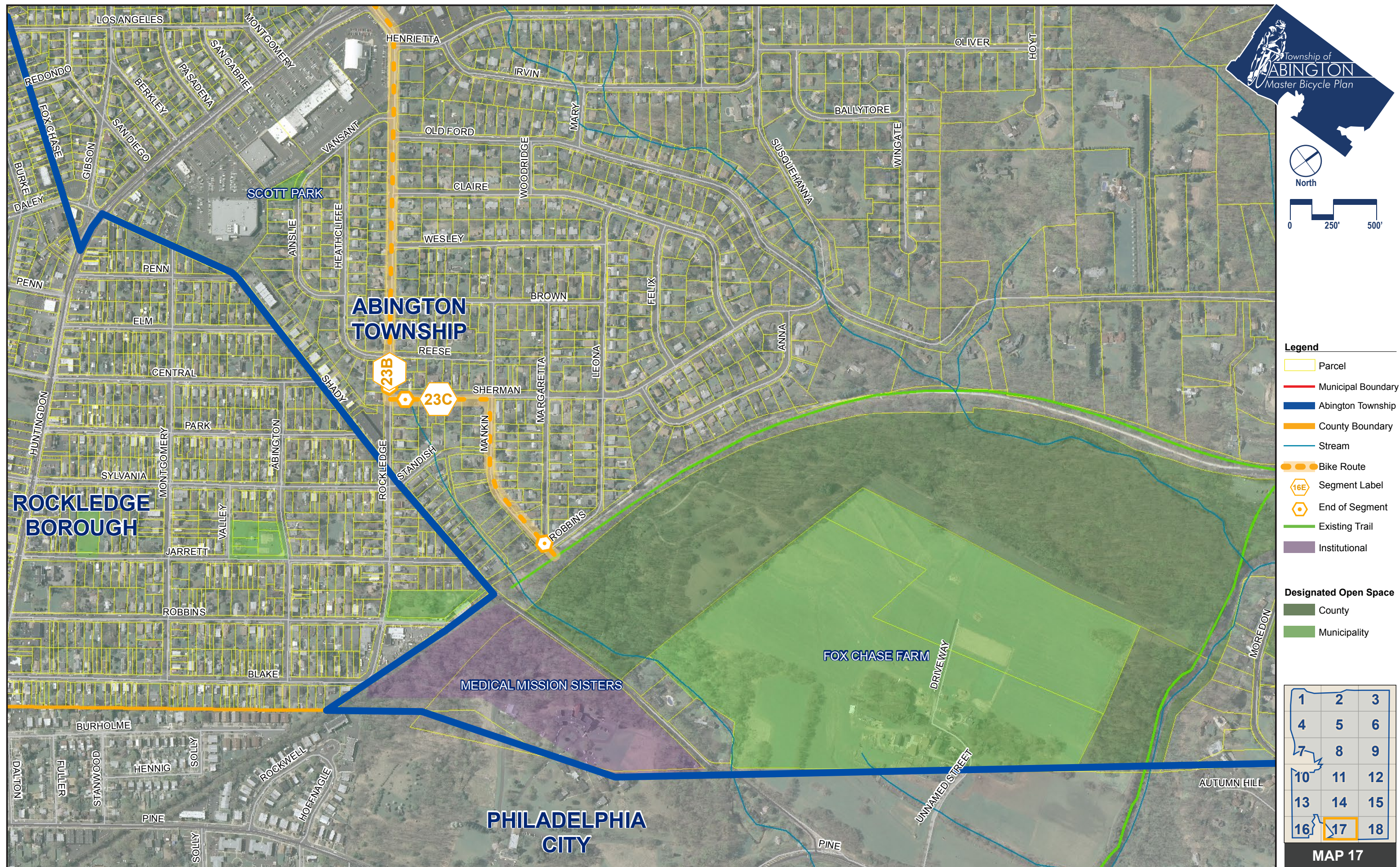
- County
- Municipality

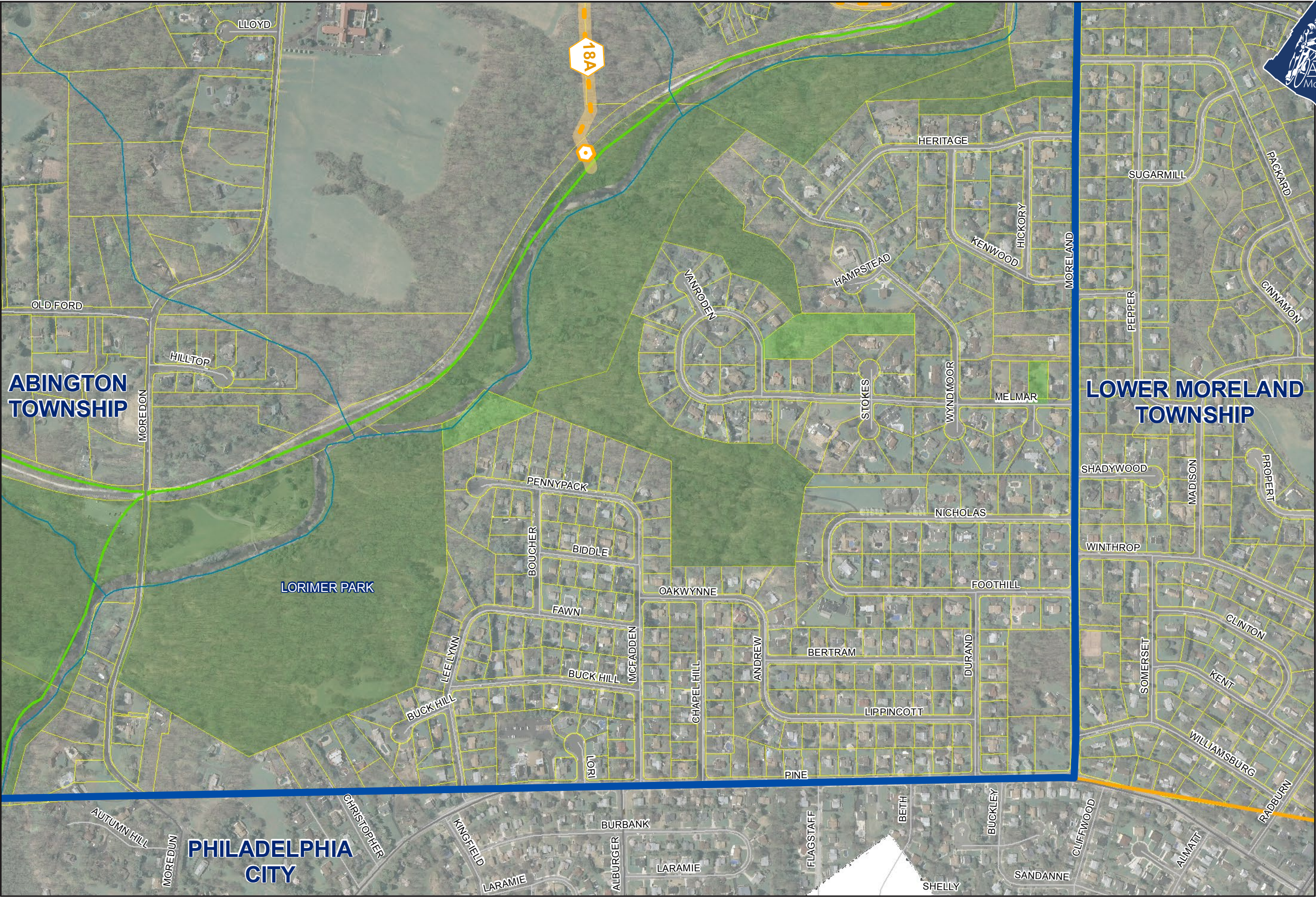
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18

MAP 14









Legend

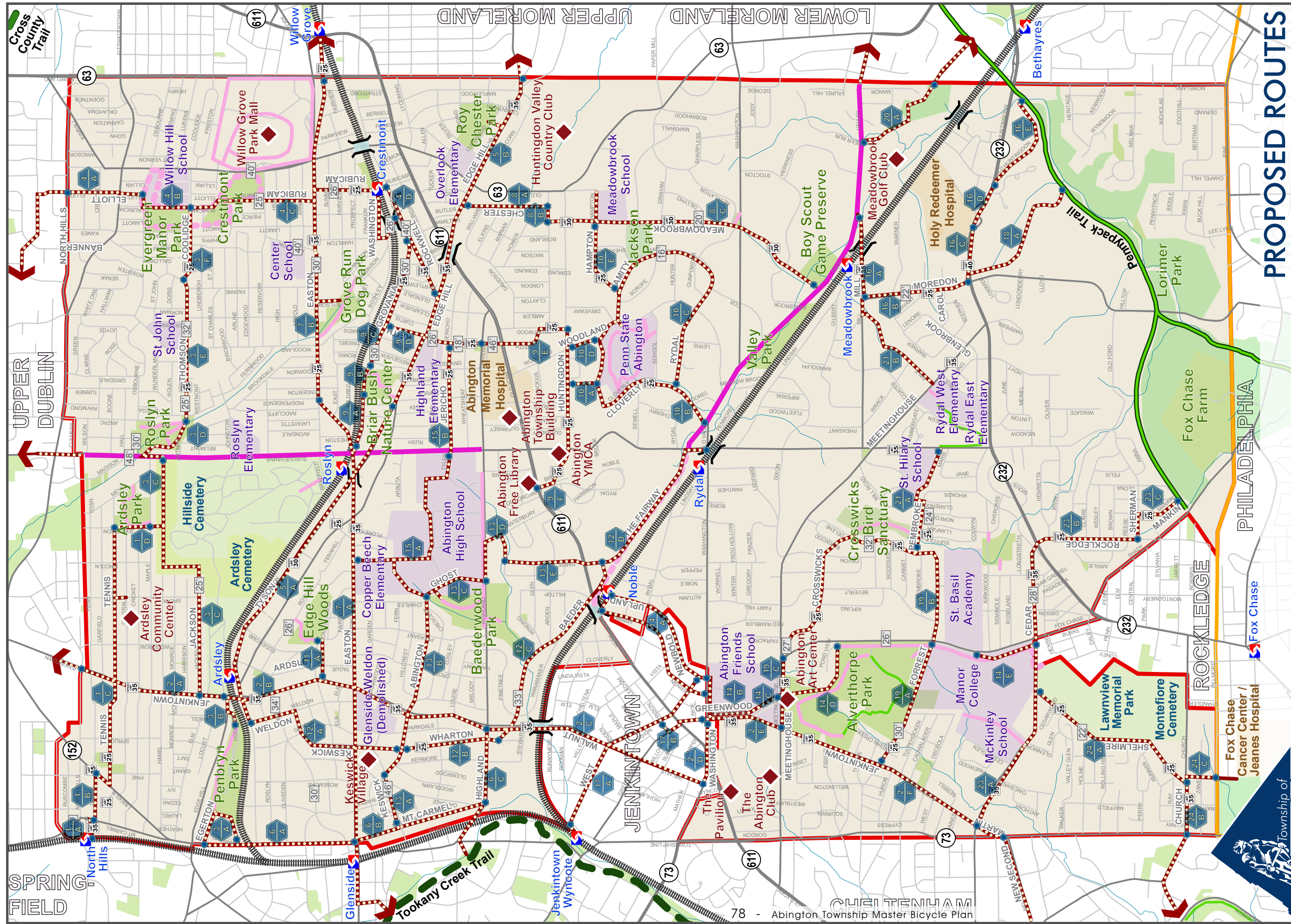
- Parcel
- Municipal Boundary
- Abington Township
- County Boundary
- Stream
- Bike Route
- Segment Label
- End of Segment
- Existing Trail
- Institutional

Designated Open Space

- County
- Municipality

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18

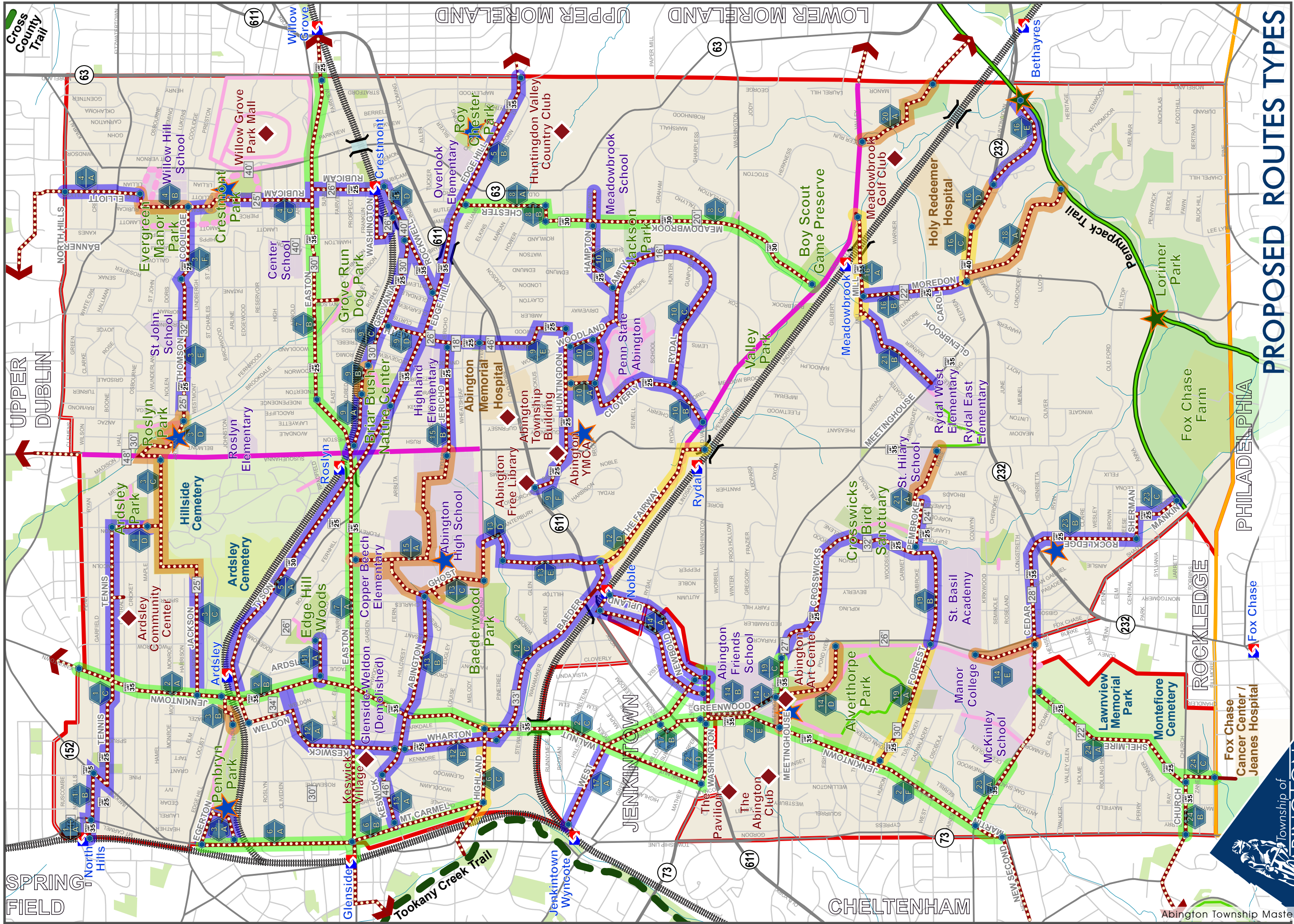
MAP 18



PROPOSED ROUTES

-  Park
 Cemetery
 School
 Hospital
 Existing Bridge
 Township boundary
 County boundary
 Railroad
 Place of Interest
 Transit Station
 Road Pavement Width
 Traffic Signal
 State Road
 Existing Bike Route
 Existing Trail
 Existing Trail (Circuit)
 Planned Trail (Circuit)
 Existing Trail (Open Space Plan)
 Proposed Trail (Open Space Plan)





PROPOSED ROUTES TYPES

	Route Segment Identification Number		Existing Bike Route		Place of Interest		Park
	Bike Lanes		Existing Trail		Transit Station		Cemetery
	Sharrows		Existing Trail (Circuit)		Road Pavement Width		School
	Signage Only		Planned Trail (Circuit)		Traffic Signal		Hospital
	Off Road / Multi-use Trail		Existing Trail (Open Space Plan)		State Road		Existing Bridge
			Proposed Trail (Open Space Plan)		Existing Trailhead		Township boundary
			Proposed Route		Proposed Trailhead		Railroad

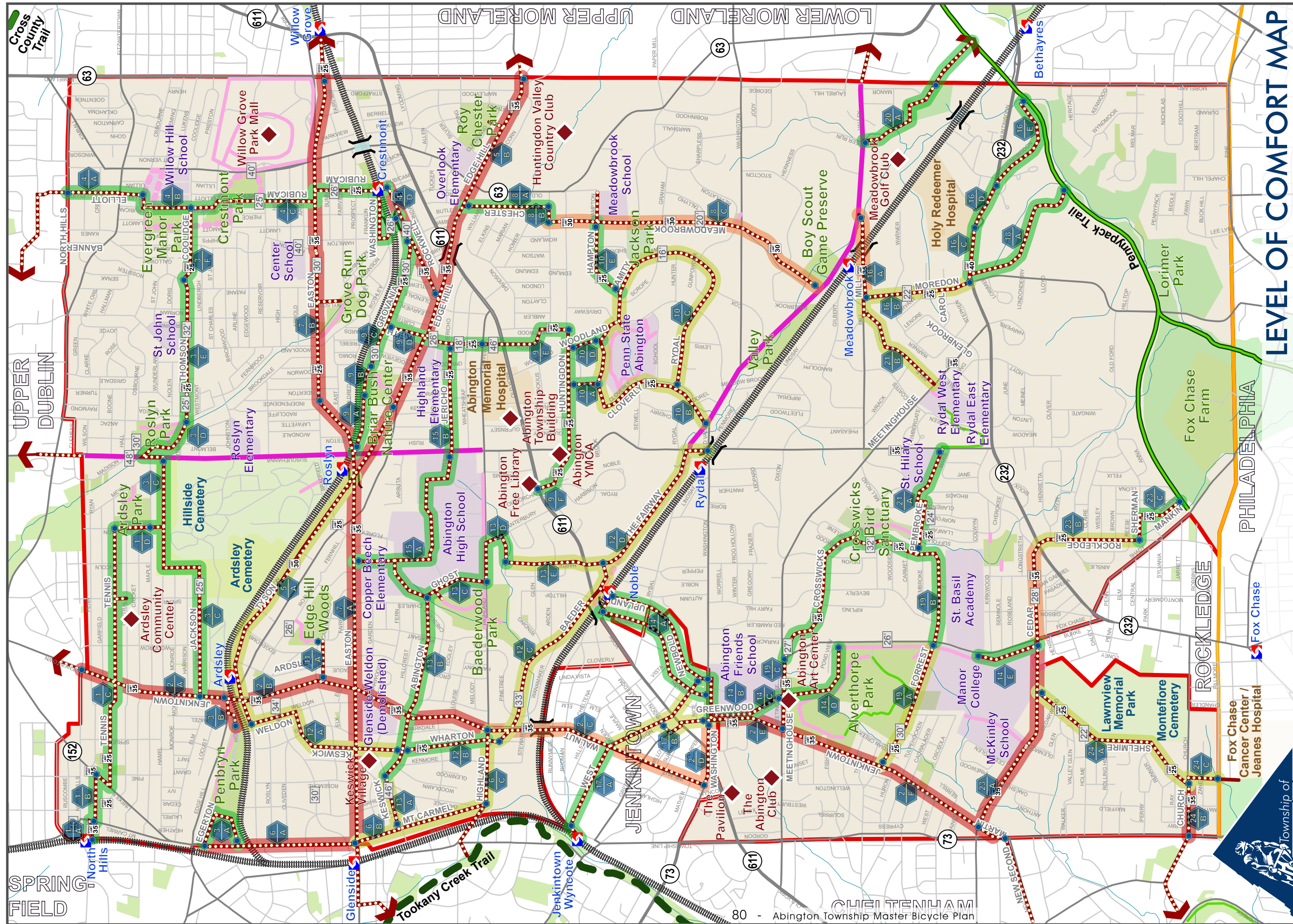
ASD 8.24.15

0 1000' 2000'

North







Abington Township Master Bicycle Plan

79 0









LEVEL OF COMFORT MAP

- Level 1: Comfortable for people of all ages + abilities
 - Level 2: Comfortable for most adults
 - Level 3: Comfortable for many experienced cyclists
 - Level 4: Comfortable for experienced and confident cyclists

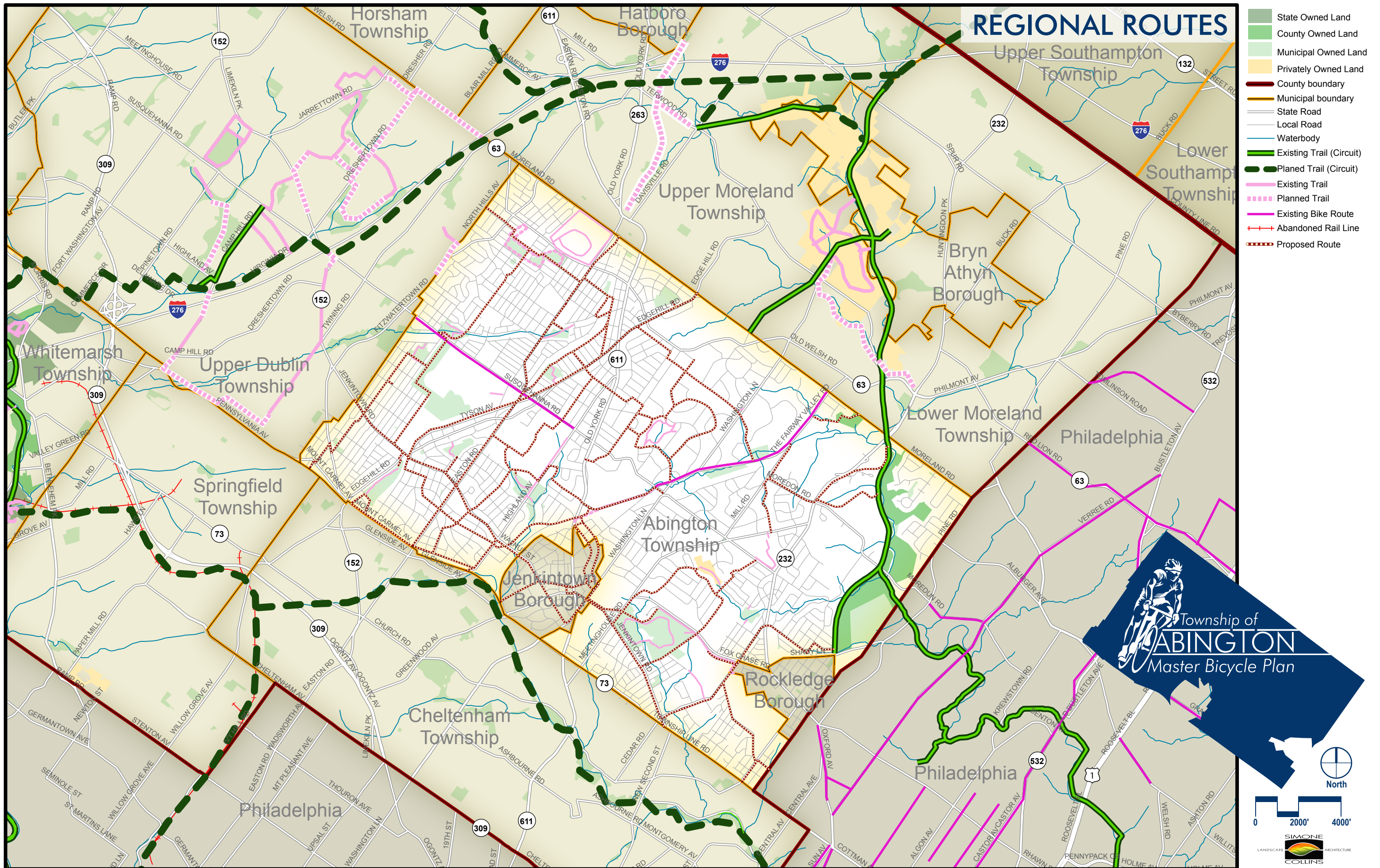
-  Existing Trail (Circuit)
 Planned Trail (Circuit)
 Existing Trail (Open Space Plan)
 Proposed Trail (Open Space Plan)
 Proposed Route
 Route Segment Identification Number

- Place of Interest
- Transit Station
- Road Pavement Width
- Traffic Signal
- State Road
- Existing Bike Route

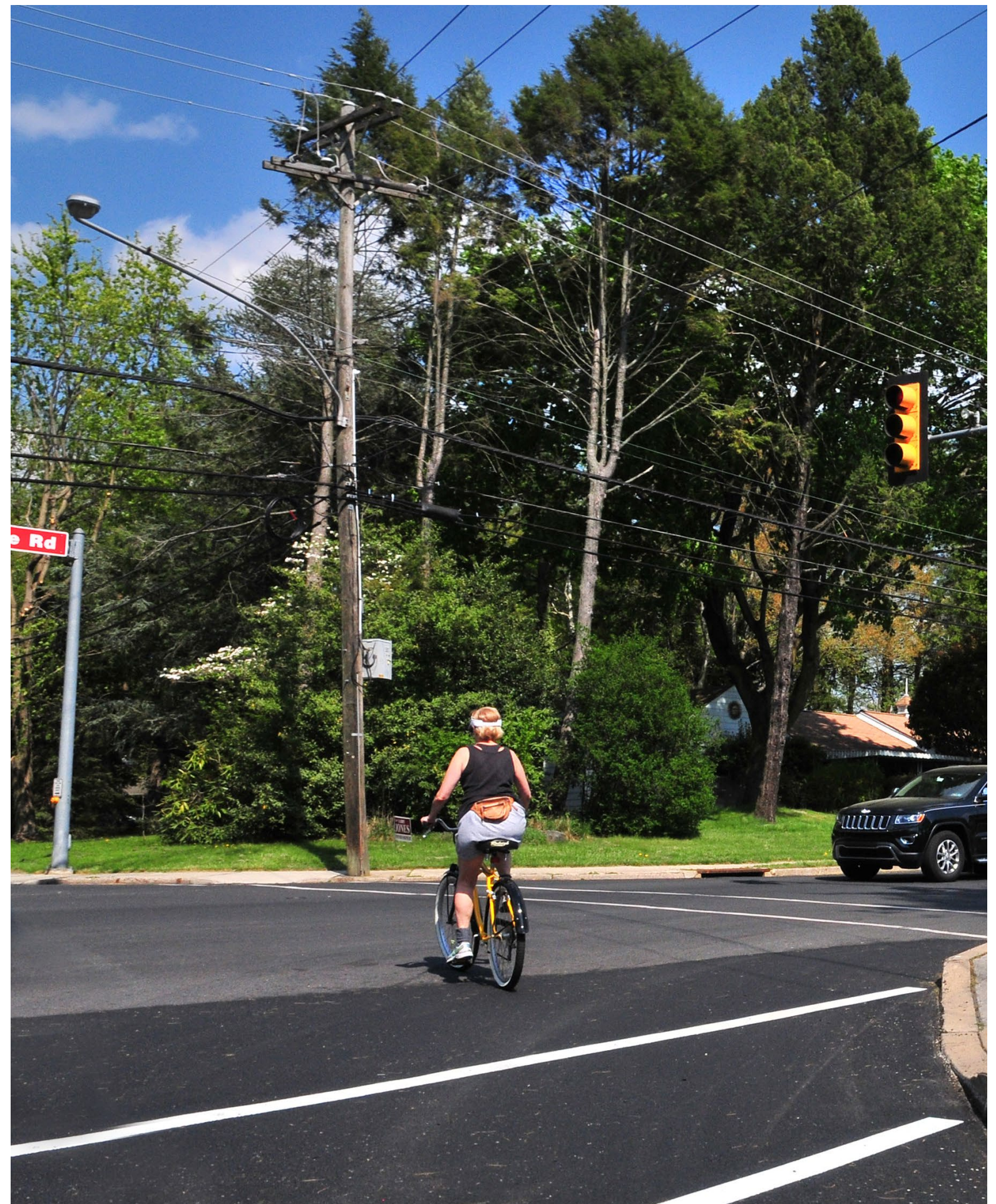
-  Park
 Cemetery
 School
 Hospital
 Existing Bridge
 Township boundary

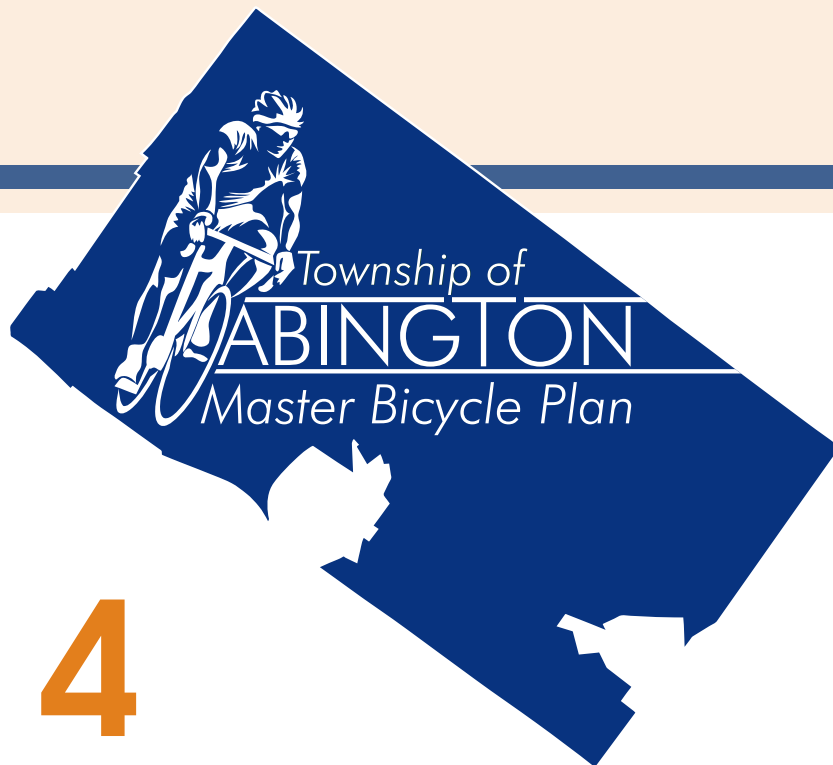
-
- ABINGTON
Master Bicycle Plan





Trail alignments (proposed and existing) were gathered from planning documents from adjacent municipalities, and data from DRVPC.





4

Implementation

Project Partners

Various partnerships will need to be fostered to assist in the promotion, funding, and/or implementation of the Master Bicycle Plan. The Township will need begin the implementation process by applying for and securing grant funds for initial projects. The following is a list of potential project partners that could be very instrumental to the implementation of the proposals in this Master Plan.

- Montgomery County
- Adjacent municipalities
- SEPTA
- DVRPC
- State Agencies (DCNR, PennDOT, DCED)
- Schools and Institutions
- Real Estate Developers
- Local businesses

State agencies such as DCNR (PA Department of Conservation and Natural Resources) and DCED (PA Department of Community and Economic Development) will be important sources for design/

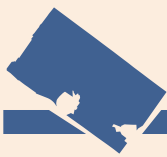
engineering and construction funding. PennDOT will need to be involved with the proposed routes on state roadways. The Township will need to continuously coordinate with SEPTA for improvements on and around rail stations and other SEPTA infrastructure. Local schools and institutions such as Abington School District and Penn State Abington are also important partners for implementation of some of the proposed routes and trailheads.

Additionally, private developers will be an important part of the implementation process where alignments proposed in this plan are to be located within or adjacent to land tracts under future or current land development review. The Township should make every effort to have these improvements included in the land development application and constructed as part of the proposed developments. To help achieve this, it is recommended that the township adopt an Official Map as described later in this chapter. Additionally several trailheads are proposed on private property where agreements will be needed from the property owners.

Official Map

As permitted by the Pennsylvania Municipalities Planning Code, an official map allows a municipality to “reserve” lands for trails, streets, parks, open space, and other public purposes. Should a landowner move forward to develop reserved lands, the municipality has one year to pursue development or acquisition of the public improvement proposed for the reserved land. Additionally, the municipality has the ability to negotiate with the land owner to incorporate improvements identified on the Official Map as part of the land development process.

Because Abington Township currently does not have an Official Map, it is recommended that it consider adopting one that includes the trails and bicycle routes proposed in this report. This will allow the Township to use the land development process as another means for implementation of the proposed trail network described herein. Inclusion on the Township's Official Map also may help with grant applications, as it shows that the municipality is committed to the proposed trail system.



Implementation Priorities

The Priority Route Map located at the end of this chapter separates the proposed routes into three categories: Short Term Priority, Mid Term Priority, and Long Term Priority. These priorities were determined based upon factors such as enhanced connectivity, improved safety, added recreational opportunities, required funding, and/or value to the community. The Township will need to continuously evaluate these routes as priorities may shift over time due to various factors. Because many of the proposed routes in this plan only involve pavement markings and signage, the Township should incorporate these proposed routes into their repaving program as funding allows.

Short Term Routes

The Implementation Priorities Map identifies short term priority routes as routes 3, 4, 12, 14, and 23. These routes make connections to the Pennypack Trail and provide important cross Township connections. Together, these routes also provide links to some of the most popular destinations in the area such as Keswick Village, Alverthorpe Park, Penbryn Park, Roslyn Park, Crestmont Park, Hillside Cemetery, Upper Dublin Township, and the Borough of Jenkintown. These connections have the highest potential to serve a large majority of the Township population and highest likelihood of attracting new riders of all ability levels.

Mid Term Priority Routes

Mid Term priority routes are identified as routes 1, 5, 9, 10, 13, 15, 16, 17. These routes provide secondary connections within the Township and are considered to have a lower level of comfort than those of the high priority grouping. Destinations include Abington High School, Penn State Abington, and Briar Bush Nature Center, Roy Chester Park, Lawnview Memorial Park, and Montefiore Cemetery. These routes also begin to branch out to many of the adjacent municipalities such as Upper Moreland, Lower Moreland Township, Cheltenham Township, and the City of Philadelphia.

Long Term Routes

Routes considered to be the lowest priority include routes 2, 6, 7, 8, 11, 19, 20, 21, 22 and 24. These routes either provide relatively minor connections within the overall system or are routes considered to be of the lowest level of comfort that will typically be used by the most experienced riders. It is anticipated that experienced riders will use these low comfort routes even without special signage or other provisions as outlined in this plan, and thus Township resources could be focused towards implementing other routes identified in this plan, in order to attract less confident cyclists to utilize the system.

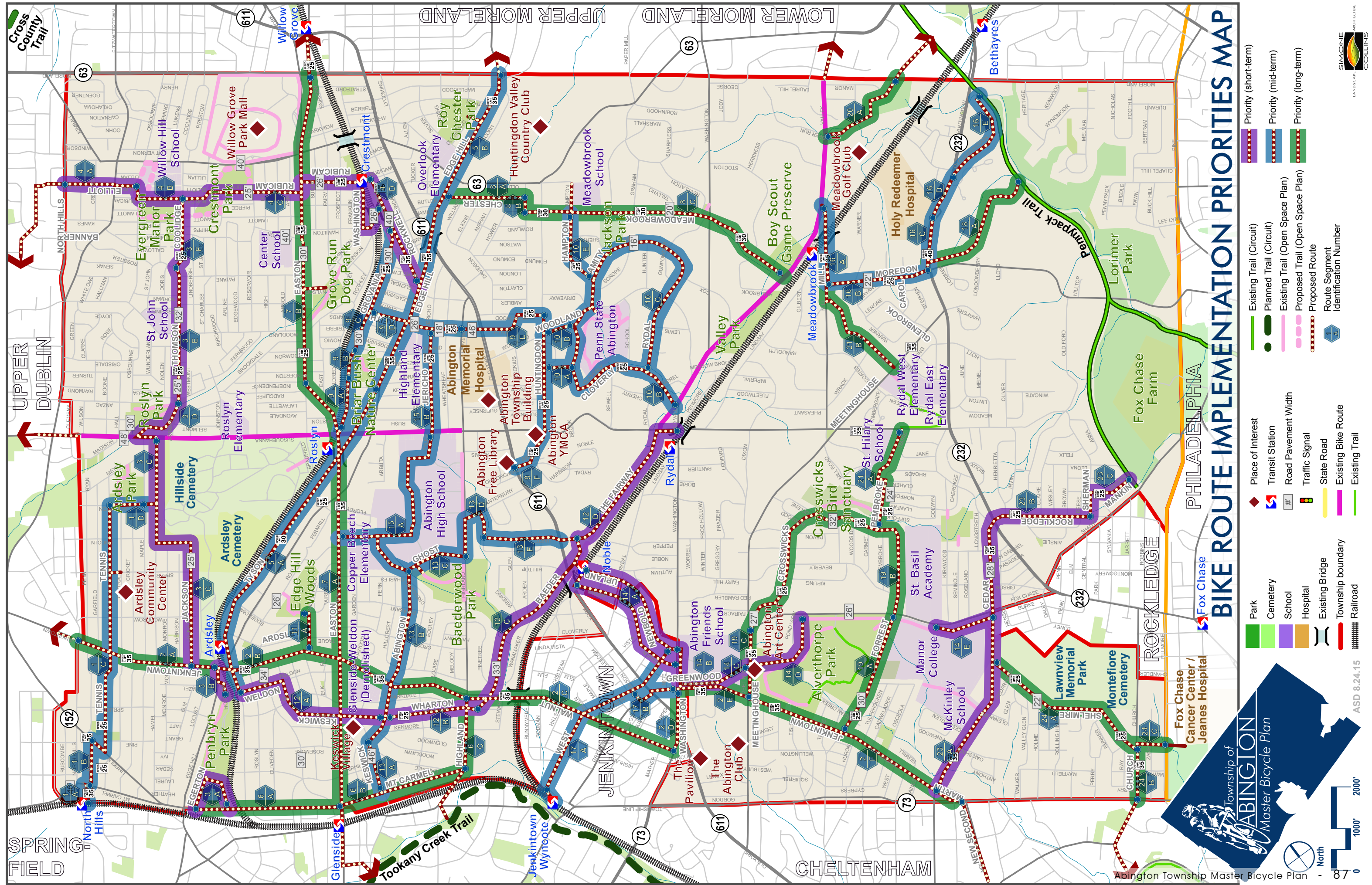
Estimate of Probable Development Cost

Probable construction costs were developed by taking measurements from the GIS mapping/database and applying unit costs determined by current material pricing and construction costs for similar projects. General construction items included in the estimate are:

- off road trail construction;
- road and shoulder modifications;
- pavement markings;
- signage; and,
- trailhead construction.

A summary of the probable development costs are as follows:

Off Road Routes (Shared Use Paths)	\$2,600,175.00
Bike Lanes	\$402,700.20
Bikes may use full lane striping	\$602,740.00
Bike Routes (signage only)	\$25,000.00
Shared Use Paths and Pavement Markings	\$791,730.00
Subtotal	\$4,422,345.20
Contingency (20%)	\$884,469.04
<u>Design & Engineering (20%)</u>	<u>\$884,469.04</u>
TOTAL	\$6,191,283.28



ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
1A	Station Ave Use Full Lane Markings	North Hills Station to Mt Carmel Ave	Township	392	Pavement Markings (Use Full Lane)	4	EA	\$300	\$1,200	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways	
					SUBTOTAL			\$1,930			
1B	Tennis Ave Use Full Lane Markings	Mt Carmel Ave to Limekiln Pike	Township	1,290	Pavement Markings (Use Full Lane)	10	EA	\$300	\$3,000	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	4	EA	\$200	\$800	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways	
					SUBTOTAL			\$4,130			
1C	Tennis Ave Use Full Lane Markings	Limekiln Pike to Jefferson Avenue	Township	5,891	Pavement Markings (Use Full Lane)	46	EA	\$300	\$13,800	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways	
					SUBTOTAL			\$16,130			
1D	Jefferson Avenue Use Full Lane Markings	Spruce Ave to Jefferson Ave	Township	817	Pavement Markings (Use Full Lane)	8	EA	\$300	\$2,400	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways	
					SUBTOTAL			\$3,000			
2A	Jenkintown Road Wayfinding Signage Only	Township Boundary to Ardsley Station	PennDOT	3,234	Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	6	EA	\$200	\$1,200	Post mounted, marks junction of two bikeways	
SUBTOTAL			\$2,000								
2B	Jenkintown Road Wayfinding Signage Only	Ardsley Station to Highland Ave	PennDOT	6,251	Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways	
SUBTOTAL			\$1,200								
2C	Walnut Street Wayfinding Signage Only	Highland Ave to Washington Lane	PennDOT	5,251	Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways	
SUBTOTAL			\$1,600								
2D	Washington Lane Wayfinding Signage Only	Walnut Street to Greenwood Avenue	Township	1,476	Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted, at major intersections, both directions	
					Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways	
SUBTOTAL			\$600								
2E	Greenwood Lane/Jenkintown Road Wayfinding Signage Only	Washington Lane to Meetinghouse Road	PennDOT	1,749	Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways	
SUBTOTAL			\$800								
2F	Jenkintown Road Wayfinding Signage Only	Meetinghouse Road to Township Line Road	PennDOT	5,595	Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways	
SUBTOTAL			\$1,600								
3A	Edgerton Ave/Durmont Ave/Houston Ave Use Full Lane Markings	Mt Carmel Ave to Penbryn Park	Township	1,817	Pavement Markings (Use Full Lane)	16	EA	\$300	\$4,800	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways	
					SUBTOTAL			\$4,800			

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
3B	Edge Hill Road Use Full Lane Markings	Penbryn Park to Jenkintown Road	PennDOT	1,153	Pavement Markings (Use Full Lane)	16	EA	\$300	\$4,800	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways	
					SUBTOTAL		\$5,490				
3C	Jackson Road/Ardsley Cemetery Shared Use Path and Use Full Lane Markings	Jenkintown Road to Susquehanna Road	Township / Private	6,334	10' Asphalt Trail	3,600	LF	\$100	\$360,000	Earthwork, construction, materials, drainage	
					Pavement Markings (Use Full Lane)	22	EA	\$300	\$6,600	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	4	EA	\$200	\$800	Post mounted, supplement to sharrows as needed	
					Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	6	EA	\$200	\$1,200	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	6	EA	\$200	\$1,200	Post mounted, marks junction of two bikeways	
					Signage: Wayfinding (Trail Ends Sign)	2	EA	\$200	\$400	Post mounted where trail ends	
					Signage: W11-1 Bicycle Crossing	0	EA	\$200	\$0	Post mounted at major intersections, both directions	
					Bridge	1	EA	\$60,000	\$60,000	Approximately 30' bridge	
					Bollards	4	EA	\$1,000	\$4,000		
					Barrier	100	LF	\$50	\$5,000		
					SUBTOTAL		\$440,400				
					3D	Roslyn Park Shared Use Path	Susquehanna Road to Thomson Road	Township	1,613	Trail widening and paving (existing trail)	1,613
Signage: Wayfinding (Turn Signs)	6	EA	\$200	\$1,200						Post mounted where route turns from one street onto another.	
Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400						Post mounted every 1300-2600 feet along staight segments	
Signage: W11-1 Bicycle Crossing	2	EA	\$200	\$400						Post mounted at major intersections, both directions	
SUBTOTAL		\$122,975									
3E	Thomson Road Use Full Lane Markings	Roslyn Park to Coolidge Ave	Township	3,166	Pavement Markings (Use Full Lane)	26	EA	\$300	\$7,800	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways	
					SUBTOTAL		\$9,800				
3F	Coolidge Ave Use Full Lane Markings	Thomson Road to Rubicam Ave	Township	1,710	Pavement Markings (Use Full Lane)	16	EA	\$300	\$4,800	Bikes may use full lane striping (250-foot spacing)	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways	
					SUBTOTAL		\$5,400				
4A	Elliott Avenue Use Full Lane Markings	North Hills Avenue to Osbourne Avenue	Township	1,584	Pavement Markings (Use Full Lane)	12	EA	\$300	\$3,600	Bikes may use full lane striping (250-foot spacing)	
					Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed	
					Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways	
					SUBTOTAL		\$4,330				
4B	Willow Hill School Shared Use Path	Osbourne Avenue to Coolidge Avenue	School District	1,345	10' Asphalt Trail	1,305	LF	\$100	\$130,500	Earthwork, construction, materials, drainage	
					Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted	
					Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways	
					Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions	
					Bollards	4	EA	\$500	\$2,000		
					SUBTOTAL		\$133,300				
4C	Rubicam Avenue/Crestmont Park Shared Use Path and Use Full Lane Markings	Coolidge Avenue to Washington Avenue	Township	4,477	Pavement Markings (Use Full Lane)	32	EA	\$300	\$9,600	Bikes may use full lane striping (250-foot spacing)	
					10' Asphalt Trail	300	LF	\$100	\$30,000	Earthwork, construction, materials, drainage	
					New Culvert	1	EA	\$150,000	\$150,000		
					Bollards	4	EA	\$1,000	\$4,000		
					Intersection Improvements to Easton Road	1	EA	\$25,000	\$25,000	Pavement Markings and refuge islands	
					Signage: W16-1 Use Full Lane	10	EA	\$200	\$2,000	Post mounted, supplement to sharrows as needed	
					Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments	
					Signage: Wayfinding (Turn Signs)	3	EA	\$200	\$600	Post mounted where route turns from one street onto another.	
					Signage: Wayfinding (Trail Ends Sign)	2	EA	\$200	\$400	Post mounted where trail ends	
					Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways	
					SUBTOTAL		\$222,400				

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
8C		Meadowbrook Road Wayfinding Signage Only	Shoemaker Road to Valley Road	Township	6,657	Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	3	EA	\$200	\$600	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$1,800	
9A		Grovania Ave Use Full Lane Markings	Susquehanna Road to Briar Bush Nature Center	Township	1,171	Pavement Markings (Use Full Lane)	8	EA	\$300	\$2,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$3,000	
9B		Briar Bush Nature Center Shared Use Path	Grovania Ave to Grovania Ave	Briar Bush Nature Center	768	10' Asphalt Trail	768	LF	\$100	\$76,800	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$79,600	
9C		Grovania Ave Use Full Lane Markings	BB Nature Center to Rockwell Road	Township	3,115	Pavement Markings (Use Full Lane)	24	EA	\$300	\$7,200	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	3	EA	\$200	\$600	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$8,200	
9D		Keith Road Use Full Lane Markings	Grovania Ave to Highland Ave	Township	2,274	Pavement Markings (Use Full Lane)	18	EA	\$300	\$5,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,260	
9E		Keith Road/Brentwood Road Use Full Lane Markings	Highland Ave to Huntingdon Road	Township	2,176	Pavement Markings (Use Full Lane)	18	EA	\$300	\$5,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	4	EA	\$200	\$800	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,730	
9F		Huntingdon Road Use Full Lane Markings	Brentwood Road to Old York Road	Township	3,982	Pavement Markings (Use Full Lane)	32	EA	\$300	\$9,600	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$11,120	
10A		Abington Athletic Fields Shared Use Path	Huntingdon Road to Cloverly Lane	Township?	714	10' Asphalt Trail	715	LF	\$100	\$71,500	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$74,300	
10B		Cloverly Lane Use Full Lane Markings	Athletic Fields to Valley Road	Township	3,484	Pavement Markings (Use Full Lane)	28	EA	\$300	\$8,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$9,520	

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
8C		Meadowbrook Road Wayfinding Signage Only	Shoemaker Road to Valley Road	Township	6,657	Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	3	EA	\$200	\$600	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$1,800	
9A		Grovania Ave Use Full Lane Markings	Susquehanna Road to Briar Bush Nature Center	Township	1,171	Pavement Markings (Use Full Lane)	8	EA	\$300	\$2,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$3,000	
9B		Briar Bush Nature Center Shared Use Path	Grovania Ave to Grovania Ave	Briar Bush Nature Center	768	10' Asphalt Trail	768	LF	\$100	\$76,800	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$79,600	
9C		Grovania Ave Use Full Lane Markings	BB Nature Center to Rockwell Road	Township	3,115	Pavement Markings (Use Full Lane)	24	EA	\$300	\$7,200	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	3	EA	\$200	\$600	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$8,200	
9D		Keith Road Use Full Lane Markings	Grovania Ave to Highland Ave	Township	2,274	Pavement Markings (Use Full Lane)	18	EA	\$300	\$5,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,260	
9E		Keith Road/Brentwood Road Use Full Lane Markings	Highland Ave to Huntingdon Road	Township	2,176	Pavement Markings (Use Full Lane)	18	EA	\$300	\$5,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	4	EA	\$200	\$800	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,730	
9F		Huntingdon Road Use Full Lane Markings	Brentwood Road to Old York Road	Township	3,982	Pavement Markings (Use Full Lane)	32	EA	\$300	\$9,600	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$11,120	
10A		Abington Athletic Fields Shared Use Path	Huntingdon Road to Cloverly Lane	Township?	714	10' Asphalt Trail	715	LF	\$100	\$71,500	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$74,300	
10B		Cloverly Lane Use Full Lane Markings	Athletic Fields to Valley Road	Township	3,484	Pavement Markings (Use Full Lane)	28	EA	\$300	\$8,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$9,520	

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
10C		Rydal Road/Amity Road/Woodland Road Use Full Lane Markings	Cloverly Lane to Athletic Fields	Township	7,939	Pavement Markings (Use Full Lane)	64	EA	\$300	\$19,200	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	8	EA	\$80	\$640	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$21,440	
10D		Woodland Road Use Full Lane Markings	Cloverly Lane to Huntingdon Road	Township	771	Pavement Markings (Use Full Lane)	6	EA	\$300	\$1,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$2,760	
10E		Hampton Road Use Full Lane Markings	Amity Road to Meadowbrook Road	Township	2,596	Pavement Markings (Use Full Lane)	20	EA	\$300	\$6,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,290	
11A		Kelly Lane Use Full Lane Markings	Ardsley Ave to Edgecomb Ave	Township	777	Pavement Markings (Use Full Lane)	6	EA	\$300	\$1,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$2,730	
12A		Keswick Avenue/Weldon Avenue Use Full Lane Markings	Tyson Avenue to Abington Avenue	Township	3,992	Pavement Markings (Use Full Lane)	28	EA	\$300	\$8,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$9,520	
12B		Wharton Road Use Full Lane Markings	Abington Avenue to Baeder Road	Township	2,224	Pavement Markings (Use Full Lane)	18	EA	\$300	\$5,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$6,930	
12C		Baeder Road Use Full Lane Markings	Wharton Ave to The Fairway	Township	5,008	Pavement Markings (Use Full Lane)	40	EA	\$300	\$12,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$14,580	
12D		The Fairway	Old York Road 611 to Susquehanna Road	Township	4,182	4" White Epoxy Pavement Markings	8,364	LF	\$1.20	\$10,037	
						Hot Thermoplastic Paint Legend, Bicycle w/ Arrow	44	EA	\$275	\$12,100	
						Signage: R3-17 Bike Lane	8	EA	\$80	\$640	Post mounted, supplement to pavement markings as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted, at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$25,037	

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
13A		Keswick Ave Use Full Lane Markings	Mt Carmel Avenue to Abington Avenue	Township	1,327	Pavement Markings (Use Full Lane)	10	EA	\$300	\$3,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$3,890	
13B		Abington Ave Use Full Lane Markings	Keswick Avenue to Ghost Road	Township	4,320	Pavement Markings (Use Full Lane)	34	EA	\$300	\$10,200	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$12,530	
13C		Ghost Road Use Full Lane Markings	Abington Avenue to Highland Avenue	Township	1,423	Pavement Markings (Use Full Lane)	12	EA	\$300	\$3,600	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$4,560	
13D		Highland Ave / Canterbury Rd / Runningbrook Rd Shared Use Path and Use Full Lane Markings	Ghost Road to Harte Road	Township	1,867	10' Asphalt Trail	850	LF	\$100	\$85,000	Earthwork, construction, materials, drainage
						Bollards	0	EA	\$500	\$0	
						Pavement Markings (Use Full Lane)	6	EA	\$300	\$1,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	4	EA	\$200	\$800	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$2,930	
13E		Harte Road Use Full Lane Markings	Runningbrook Road to Old York Road	Township	1,830	Pavement Markings (Use Full Lane)	16	EA	\$300	\$4,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$5,290	
14A		Newbold Road / Vernon Road Use Full Lane Markings	Washington Lane to Rodman Avenue	Borough	7,154	Pavement Markings (Use Full Lane)	56	EA	\$300	\$16,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	8	EA	\$165	\$1,320	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$19,720	
14B		Greenwood Avenue/Washington Lane Shared Use Path (Extension of Existing Path)	Newbold Road to Jenkintown Road	PennDOT/Township	1,920	10' Asphalt Trail	1,150	LF	\$100	\$115,000	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$118,200	
14C		Greenwood Avenue Separated Bike Lanes Convert Greenwood Avenue to One-Way NB	Jenkintown Road to Meetinghouse Road	Township	777	4" White Epoxy Pavement Markings	4,000	LF	\$1.20	\$4,800	Gore markings
						Hot Thermoplastic Paint Legend, Bicycle w/ Arrow	6	EA	\$275	\$1,650	
						Tubular Delineator	39	EA	\$25	\$975	20-foot spacing
						Signage R5-1 Do Not Enter	3	EA	\$100	\$300	
						Signage: R6-1 One-Way	4	EA	\$100	\$400	
						Signage: Special - "Except Bicycles"	3	EA	\$100	\$300	
						Signage: R3-17 Bike Lane	2	EA	\$100	\$200	Post mounted, supplement to pavement markings as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted, at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$9,355	

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
14D		Alverthorpe Park Perimeter Trail Shared Use Path	Meetinghouse Road to Fox Chase Road	Township	2,233	10' Asphalt Trail	2,233	LF	\$100	\$223,300	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$226,100	
14E		Manor College Trail Extension Shared Use Path	Seminole Road to McKinley School	Private	1,315	10' Asphalt Trail	1,315	LF	\$100	\$131,500	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$133,900	
15A		Abington High School Trail Shared Use Path	Ghost Road to Jericho Road and extension to Easton Road	School District	6,487	10' Asphalt Trail	6,487	LF	\$100	\$648,700	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	6	EA	\$500	\$3,000	
									SUBTOTAL	\$652,500	
15B		Jericho Road Use Full Lane Markings	Susquehanna Road to Keith Road	Township	2,535	Pavement Markings (Use Full Lane)	20	EA	\$300	\$6,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,330	
16A		Mill Road Bike Lanes	Valley Road to Moredon Road	Township	1,935	Asphalt shoulder modifications	19,300	SY	\$17	\$328,100	
						4" White Epoxy Pavement Markings	3,860	LF	\$1.20	\$4,632	
						Hot Thermoplastic Paint Legend, Bicycle w/ Arrow	18	EA	\$275	\$4,950	
						Signage: R3-17 Bike Lane	4	EA	\$80	\$320	Post mounted, supplement to pavement markings as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted, at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$339,202	
16B		Moredon Road Use Full Lane Markings	Mill Road to Huntingdon Pike	Township	2,589	Pavement Markings (Use Full Lane)	20	EA	\$300	\$6,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,780	
16C		Huntingdon Pike Shared Use Path	Moredon Road to Holy Redeemer Hospital	PennDOT	1,135	10' Asphalt Trail	1,135	LF	\$100	\$113,500	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$116,300	
16D		Huntingdon Pike Shared Use Path	Holy Redeemer Hospital to Old Huntingdon Pike	PennDOT	1,262	10' Asphalt Trail	1,262	LF	\$100	\$126,200	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$129,000	

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
16E		Old Huntingdon Pike Use Full Lane Markings	Huntingdon Pike to Pennypack Trail	Township	2,488	Pavement Markings (Use Full Lane)	20	EA	\$300	\$6,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,530	
17A		West Avenue Use Full Lane Markings	Jenkintown/Wyncote Station to Newbold Road	Borough	4,698	Pavement Markings (Use Full Lane)	38	EA	\$300	\$11,400	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$12,780	
17B		Cedar Street/Greenwood Avenue Use Full Lane Markings	West Avenue to Washington Lane	Borough	1,871	Pavement Markings (Use Full Lane)	16	EA	\$300	\$4,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	2	EA	\$165	\$330	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$5,890	
18A		Sisters of Holy Redeemer Shared Use Path	Moredon Road to Pennypack Trail	Private	3,547	10' Asphalt Trail	3,547	LF	\$100	\$354,700	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$357,500	
19A		Forrest Ave Bike Lanes	Jenkintown Road to Fox Chase Road	Township	3,066	Asphalt shoulder modifications	0	SY	\$17	\$0	
						4" White Epoxy Pavement Markings	6,132	LF	\$1.20	\$7,358	
						Hot Thermoplastic Paint Legend, Bicycle w/ Arrow	30	EA	\$275	\$8,250	
						Signage: R3-17 Bike Lane	4	EA	\$80	\$320	Post mounted, supplement to pavement markings as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted, at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$17,788	
19B		Forrest Ave/Crosswicks Road Use Full Lane Markings	Fox Chase Road to Meetinghouse Road	Township	7,674	Pavement Markings (Use Full Lane)	62	EA	\$300	\$18,600	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	8	EA	\$80	\$640	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$20,840	
19C		Meetinghouse Road Wayfinding Signage Only	Fox Chase Road to Jenkintown Road	Township	1,585	Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$800	
20A		Meadowbrook Golf Course Shared Use Path	Deer Run to Township Boundary	Private	3,495	10' Asphalt Trail	6,990	LF	\$100	\$699,000	Earthwork, construction, materials, drainage
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	4	EA	\$200	\$800	Post mounted, marks junction of two bikeways
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$701,800	

ESTIMATE OF PROBABLE DEVELOPMENT COSTS

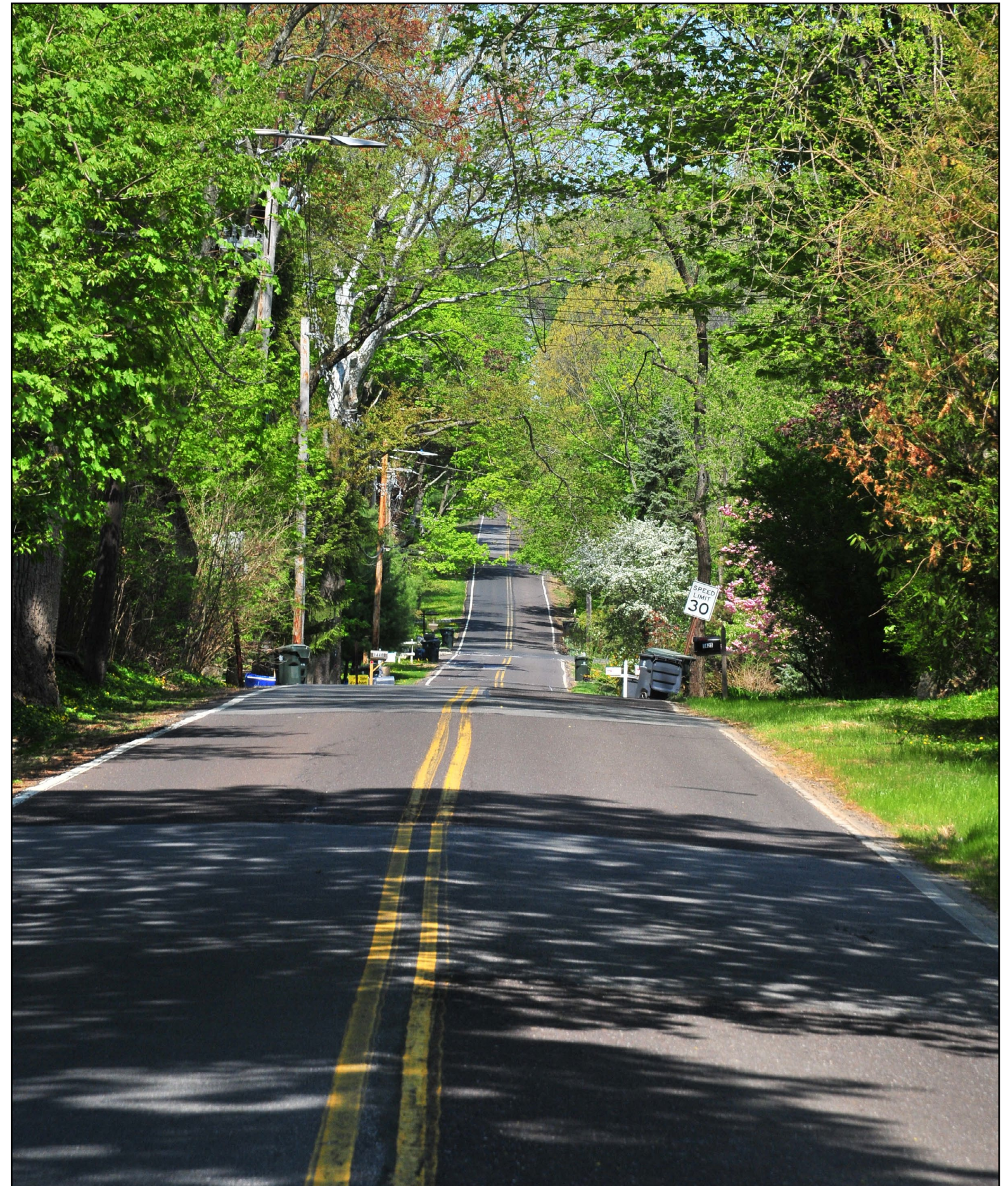
Segment ID	Priority	Road Name	Description	Roadway Ownership	Length (LF)	Proposed Improvements	QTY	UNIT	UNIT COST	TOTAL	
21A		Pembroke Road/Poitiers School Shared Use Path and Use Full Lane Markings	Forrest Ave to Susquehanna Road	Township	2,544	Pavement Markings (Use Full Lane)	10	EA	\$300	\$3,000	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	2	EA	\$200	\$400	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
						10' Asphalt Trail	1,200	LF	\$100	\$120,000	Earthwork, construction, materials, drainage
						Bollards	4	EA	\$500	\$2,000	
									SUBTOTAL	\$126,000	
21B		Dale Road/Mill Road Use Full Lane Markings	Meetinghouse Road to Moredon Road	Township	2,730	Pavement Markings (Use Full Lane)	22	EA	\$300	\$6,600	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	2	EA	\$80	\$160	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$7,160	
23A		Cedar Road Wayfinding Signage Only	Jenkintown Road to Fox Chase Road	PennDOT	4,652	Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	0	EA	\$200	\$0	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$800	
23B		Cedar Road/Rockledge Ave Use Full Lane Markings	Fox Chase Road to Sherman Ave	PennDOT/Township	4,565	Pavement Markings (Use Full Lane)	36	EA	\$300	\$10,800	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	4	EA	\$80	\$320	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	4	EA	\$165	\$660	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	4	EA	\$200	\$800	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$12,980	
23C		Sherman Avenue/Mankin Avenue Use Full Lane Markings	Rockledge Ave to Pennypack Trail	Township	1,610	Pavement Markings (Use Full Lane)	14	EA	\$300	\$4,200	Bikes may use full lane striping (250-foot spacing)
						Signage: W16-1 Use Full Lane	0	EA	\$80	\$0	Post mounted, supplement to sharrows as needed
						Signage: W11-1 Bicycle Crossing	0	EA	\$165	\$0	Post mounted at major intersections, both directions
						Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	4	EA	\$200	\$800	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$5,000	
24A		Shelmire Street Wayfinding Signage Only	Cedar Road to Church Road	Township	4,344	Signage: Wayfinding (Confirmation Signs)	6	EA	\$200	\$1,200	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	2	EA	\$200	\$400	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$2,000	
24B		Church Road Wayfinding Signage Only	Shelmire Street to Township Line Road	Township	1,299	Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	1	EA	\$200	\$200	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$600	
24C		Shelmire Street Wayfinding Signage Only	Shelmire Street to Township Line	Township	686	Signage: Wayfinding (Confirmation Signs)	0	EA	\$200	\$0	Post mounted, every 1300-2600 feet along staight segments
						Signage: Wayfinding (Turn Signs)	2	EA	\$200	\$400	Post mounted where route turns from one street onto another.
						Signage: Wayfinding (Decision Signs)	0	EA	\$200	\$0	Post mounted, marks junction of two bikeways
									SUBTOTAL	\$400	

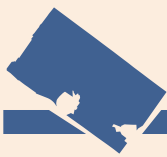
Key

	Short-term Priority
	Mid-term Priority
	Long-term Priority

Subtotal	\$4,422,345.20
Contingency (20%)	\$884,469.04
Design & Engineering (20%)	\$884,469.04
TOTAL	\$6,191,283.28

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Potential Funding Sources

While many of the bicycle routes proposed in this plan can be implemented as part of the Abington Township Public Works repaving program, it is not expected that funding all of these improvements will be the sole responsibility of the Township. There are multiple funding sources that provide grants for development projects like those identified in this plan. Examples of such sources are as follows.

Pennsylvania Department of Conservation and Natural Resources (PA DCNR) - Community Conservation Partnership Program (C2P2)

The Community Recreation and Conservation Program through the PA DCNR Community Conservation Partnership Program (C2P2) provides funding to municipalities and authorized nonprofit organizations for recreation, park, trail and conservation projects. These include planning for feasibility studies, trail studies, conservation plans, master site development plans, and comprehensive recreation park and open space and greenway plans; land acquisition for active or passive parks, trails and conservation purposes; and new development and rehabilitation of parks, trails, and recreation facilities. Most of these projects require a 50% match, which can include a combination of cash and/or non-cash values.

The Pennsylvania Recreational Trails Program, also through the C2P2 Program, awards grants to federal and state agencies, local governments, non-profit and for-profit organizations to assist with the construction, renovation and maintenance of trails and related facilities for both motorized and non-motorized recreational trail use, the purchase or lease of equipment for trail maintenance and construction and the development of educational materials and programs. These grants require a minimum 20% match, which can include a combination of cash and/or non-cash values.

Grant applications for the C2P2 program are accepted annually—usually in April. More information on this program can be found at the DCNR website: <http://www.dcnr.state.pa.us/brc/grants/indexgrantsinstruct.aspx>

Transportation Alternatives Program (TAP)

The Transportation Alternatives Program (TAP) is a Federal highway and transit funds set-aside under the Surface Transportation Program (STP) for community-based “non-traditional” projects designed to strengthen the cultural, aesthetic, and environmental aspects of the nation’s intermodal transportation system. The Transportation Enhancements (TE) funding category, which has historically funded many pedestrian and bicycle supportive projects such as streetscape improvements, was originally established by Congress in 1991 under the IS-TEA transportation authorization legislation, and was most recently affirmed as TAP under the Moving Ahead for Progress in the 21st Century Act (MAP-21).

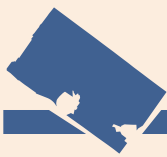
The program seeks to provide funding for projects such as construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation. Non-motorized forms of transportation include sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990. For more information on the PA Transportation Alternative Program, visit the DVRPC website at <http://www.dvrpc.org/TA/>

Delaware Valley Regional Planning Commission (DVRPC)

The DVRPC Regional Trails program with funding from the William Penn Foundation aims to capitalize upon opportunities for trail development by providing funding for targeted, priority trail design, construction, and planning projects that will promote a truly connected, regional network of multi-use trails with Philadelphia and Camden as its hub. Previous grants administered through this program required a 20% match. For information contact the DVRPC grant administrator or visit the program’s website at: <http://www.dvrpc.org/RegionalTrailsProgram/>

Commonwealth Financing Agency (CFA) - Greenways, Trails and Recreation Program (GTRP)

Administered through the PA Department of Community and Economic Development (DCED), the Greenways, Trails and Recreation Program (GTRP) provides funding for planning, acquisition, development,



rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects. The program awards up to \$250,000 per project to eligible applicants and required a local match of 15% of the total project cost. Additional information on the Greenways, Trails, and Recreation Program can be found at <http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/greenways-trails-and-recreation-program-gtrp>

Commonwealth Financing Agency (CFA) – Multimodal Transportation Fund

The Multimodal Transportation Fund provides grants to encourage economic development and ensure that a safe and reliable system of transportation is available to the residents of the Commonwealth. Funds may be used for the development, rehabilitation and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development. Grants are available for projects with a total cost of \$100,000 or more and grants shall not exceed \$3,000,000 for any project. For more information please visit <http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/multimodal-transportation-fund>

PennDOT Multimodal Fund

PennDOT's multimodal program seeks to improve freight and passenger mobility options, maximize benefits of capital investment in all modes of transportation, promote safety on all modes of transportation, use transportation improvements to spur economic development, and improve the effectiveness and efficiency of the transportation network. Projects eligible for funding include:

- projects related to streetscape, sidewalk enhancement, pedestrian safety
- transit oriented development projects
- projects related to connectivity improvements

- projects that coordinate local land use with transportation assets to enhance existing communities

The PennDOT Multimodal fund is separate from the Multimodal Transportation Fund administered by the Pennsylvania DCED. A local match of at least 30% of the non-federal project costs is required. While the deadline for 2014 applications has passed, upcoming deadlines and more information on the program can be found at <http://www.dot.state.pa.us/internet/web.nsf/Multimodal?OpenFrameSet>

The PennDOT Multimodal fund is separate from the Multimodal Transportation Fund administered by the Pennsylvania DCED.

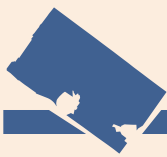
Safe Routes To School (SRTS)

Administered through PennDOT, Pennsylvania's Safe Routes to School (SRTS) program makes federal-aid highway funds available to school districts, schools, municipalities, county government, and planning partners to address infrastructure projects that provide safer walking and bicycling routes. These funds are intended to benefit elementary and middle school children in kindergarten through the eighth grade.

SRTS funding is only available to municipalities, school districts, individual schools county government, and planning partners. Funding may only be used for infrastructure projects that physically exist within the public right-of-way.

Eligible projects include the planning, design, and construction of infrastructure-related projects that will substantially improve the ability of students to walk and bicycle to school, including:

- sidewalk improvements
- traffic calming and speed reduction improvements
- pedestrian and bicycle crossing improvements
- on-street bicycle facilities
- off-street bicycle and pedestrian facilities
- secure bicycle parking facilities
- traffic diversion improvements in the vicinity of schools



While the next round of SRTS funding in Pennsylvania has not yet been determined, Abington should develop strong partnerships with Abington School District and other private schools in the Township to seek future SRTS funding when available. For more information on the PA SRTS program, please visit <http://www.saferoutespa.org/Funding/Infrastructure-Funding/>

PennVEST (Pennsylvania Infrastructure Investment Authority)

PennVEST offers both grants and low interest loans for projects that help to manage stormwater and improve water quality. Several of the proposed bike routes may be of interest to PennVEST since they may include stormwater infiltration areas / BMPs (Best Management Practices) for stormwater and water quality enhancements .

Local Schools and Institutions

Local schools and institutions could also be potential funding sources. Trails or bicycle routes on or near school property, trails that improve transportation alternatives for students, or trails that provide a recreational amenity to the institution could be targets for this kind of funding. It is also possible that trails could be incorporated in various educational programs. Partnerships with local schools and institutions such as the Abington School District, Penn State Abington, Manor College, and other private institutions in the Township could also result in funding opportunities for trail maintenance or cleanup as part of an educational program or volunteer groups. While the amounts of funds raised from these sources may be relatively small, these partnerships are valuable and their support that is important to the long-term success of the trails.





APPENDIX CONTENTS

Committee Meetings
Focus Groups
Memos
Planning Documents
Public Meetings

5

Appendix





Prepared by:

