

Liberty Bell Trail Southern Connection

Upper Gwynedd Township, Worcester Township, Whitpain Township, East Norriton Township,
Municipality of Norristown
Montgomery County, Pennsylvania

Executive Summary

This technical memorandum assesses the feasibility of constructing a multi-use trail between Parkside Place in Upper Gwynedd Township, and the Schuylkill River Trail in the Municipality of Norristown, Pennsylvania. The 8 mile study corridor includes portions of Upper Gwynedd Township, Worcester Township, Whitpain Township, East Norriton Township, and the Municipality of Norristown. Norristown Farm Park, owned by the Commonwealth of Pennsylvania and managed by Montgomery County, is within the study area.

The outcome of an in-depth investigation into existing conditions including topography, land uses, environment, ownership and available rights-of-way; meetings with officials and stakeholders; identification of opportunities and constraints; and analysis of alternates is summarized in the following recommendations.

On the west side of North Wales Road, for a distance of 4 miles, from West Street on Upper Gwynedd's boundary with North Wales Borough, south to Township Line Road, **construct a 10 foot wide multi-use trail a minimum of 5 feet from the edge of North Wales Road**. This side path will traverse portions of Upper Gwynedd and Worcester Townships. Due to conditions at North Wales Road's underpass beneath the Pennsylvania Turnpike, the multi-use trail may need to cross into Whitpain Township for a distance of 800 feet. In that case, trail users would cross North Wales Road at the signalized intersection with Skippack Pike (PA 73) and at a new mid-block crossing 800 feet south.

In order to cross Wissahickon Creek, Stony Creek (twice), and the SEPTA Stony Creek Branch railroad (northernmost of three railroad crossings), **four trail bridges will need to be constructed**: two in Upper Gwynedd, and two in Worcester. These would be placed adjacent to existing North Wales Road bridges. Because the two bridges in Upper Gwynedd have sufficient width, an alternate solution is to retrofit those bridges, reallocating space on the bridge decks rather than constructing separate trail bridges.

The proposed alignment would utilize two pieces of existing 12 foot wide asphalt trail, totaling a quarter mile in length, adjacent to Cassel Road in Worcester Township. Between Skippack Pike and Morris Road in Worcester Township, where space allows, the multi-use trail may be placed adjacent to existing curvilinear concrete sidewalks. In Upper Gwynedd, the multi-use trail would replace existing sidewalks.

Two at-grade trail crossings of SEPTA's Stony Creek Branch railroad will need to be implemented in Worcester Township. These would be constructed in close proximity to the existing highway grade crossings and would be categorized as improvements to existing crossings, rather than as new railroad crossings.



Although sufficient right-of-way is available for most of the planned alignment, **there are areas where there is not enough right-of-way and trail easements will need to be negotiated.** Trail easements will need to be negotiated with 6 to as many as 12 property owners in Upper Gwynedd Township, and 12 owners in Worcester Township. Please refer to Appendix E of the report.

A one-mile segment of Green Ribbon Trail in Upper Gwynedd Township was considered as a potential multi-use trail alignment between North Wales Road adjacent to Moyers Boulevard, and Parkside Place. After careful consideration it was determined that a new multi-use trail in this area, on lands owned by Wissahickon Trails (formerly known as Wissahickon Valley Watershed Association) would not be pursued.

In East Norriton Township, because a suitable off-road trail corridor could not be identified, the implementation of **bike lanes and signage is recommended on a 0.9 mile long stretch of North Wales Road** between Germantown Pike and Township Line Road. The posted speed limit on this section of North Wales Road is 25 mph and the Township prioritizes traffic law enforcement here. Trail users would cross Germantown Pike at the signalized intersection and continue along a short (300 foot long) segment of Barley Sheaf Drive to the entrance of Norristown Farm Park.

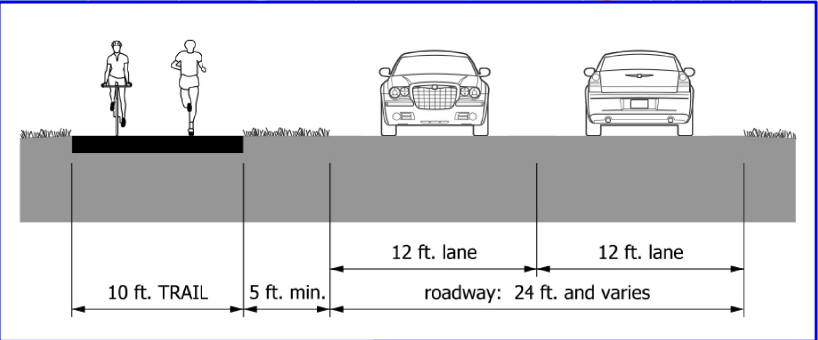
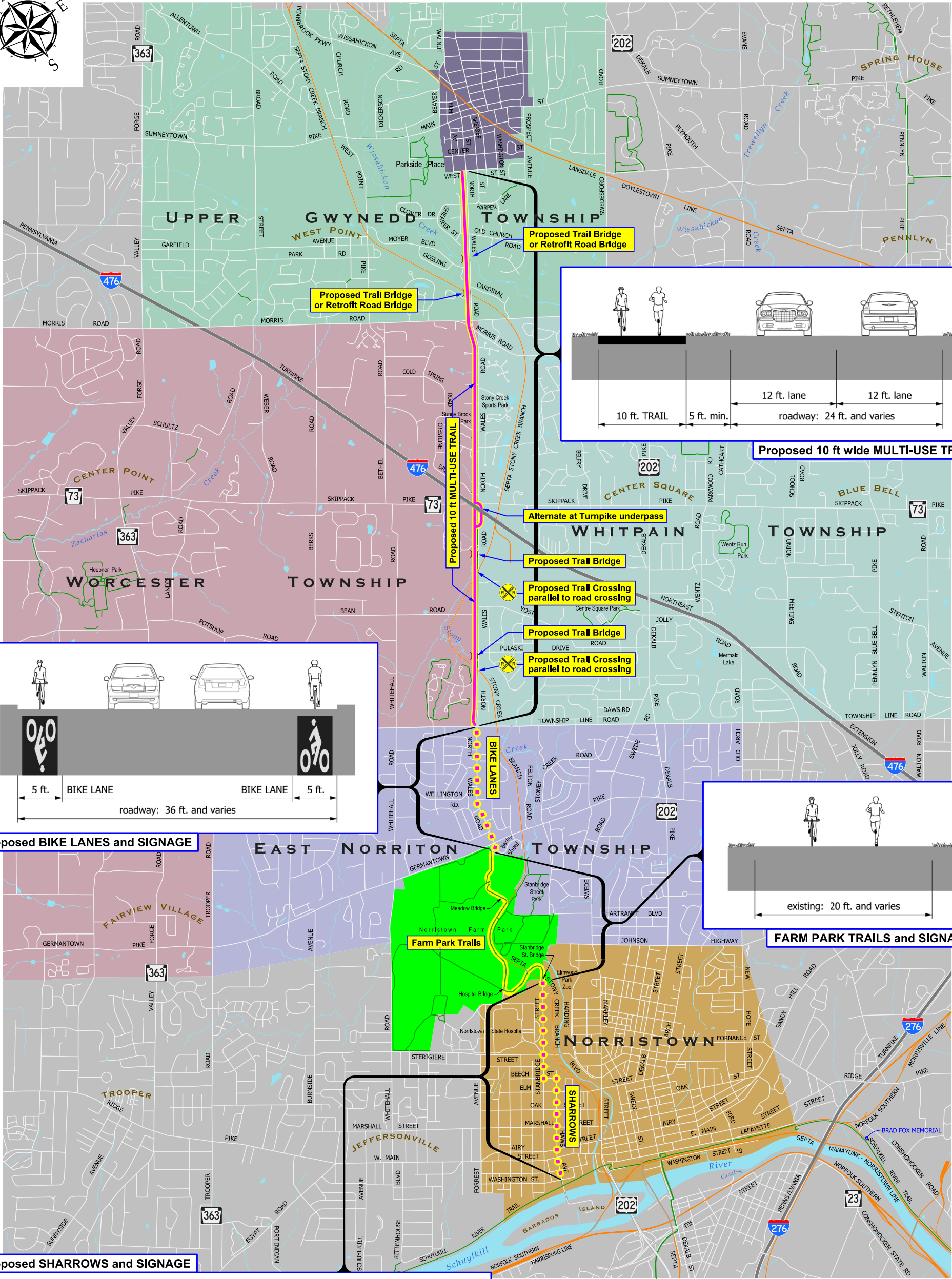
This study recommends **co-locating the Liberty Bell Trail on 1.7 miles of existing multi-use trails within Norristown Farm Park**, working in coordination with manager Montgomery County Parks, Trails, & Historic Sites and owner DCNR. Installation of directional signage along with suggested improvements are detailed in the Farm Park section of this technical memorandum.

One and one half miles (1.5 miles) of streets in the Municipality of Norristown are designated Farm Park Connector. The streets are Stanbridge Street from the Farm Park to Beech Street, two blocks of Beech Street, and Haws Avenue from Beech Street to Washington Street where connection is made with the Schuylkill River Trail. **This study recommends installation of “Sharrow” pavement markings on these streets and the provision of directional signage.** In addition, in the interest of safety several blocks of nose-in angle parking on the east side of Haws Avenue should be replaced with back-in angle parking.

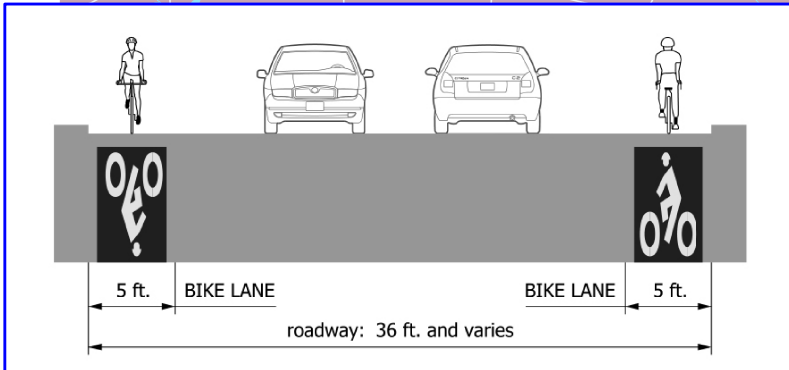
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The rationale for these recommendations is more fully explored in the technical memorandum and its appendices.

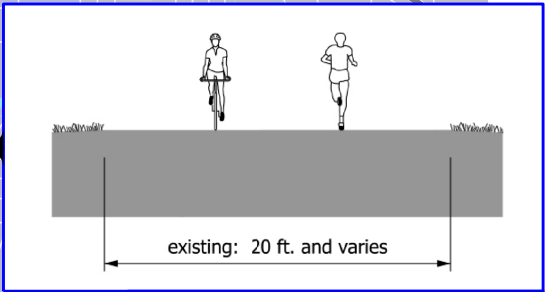
Please refer to the maps included in Appendix A, in particular the **Summary of Recommendations map.**



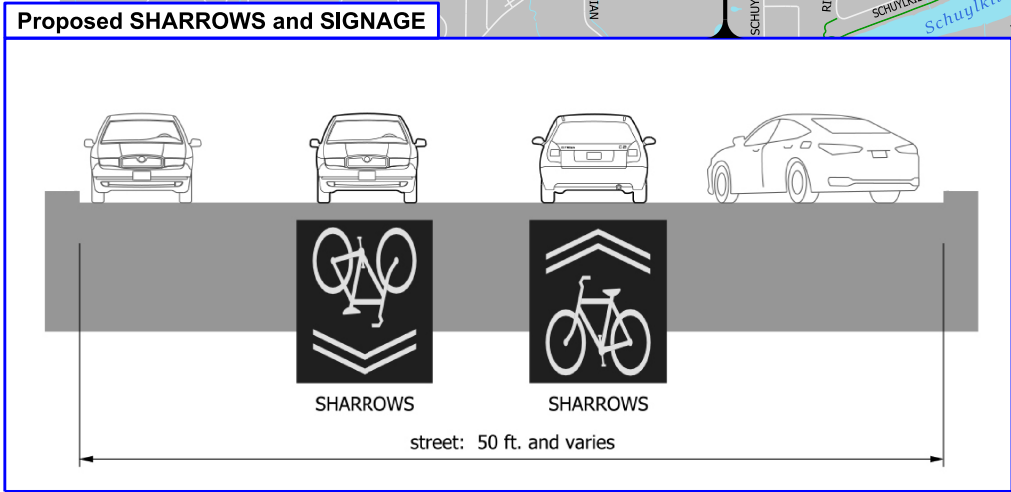
Proposed 10 ft wide MULTI-USE TRAIL



Proposed BIKE LANES and SIGNAGE



FARM PARK TRAILS and SIGNAGE

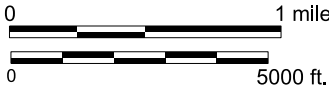


Proposed SHARROWS and SIGNAGE

Summary of Recommendations

- Proposed 10 ft wide MULTI-USE TRAIL
- Proposed PAVEMENT MARKINGS and SIGNAGE
- Farm Park Trails


- Existing Multi-Use Trail
- Road
- Railroad



Liberty Bell Trail Southern Connection Feasibility Study
Montgomery County Pennsylvania

August 22, 2023

PREPARED FOR:


PENNSYLVANIA ENVIRONMENTAL COUNCIL

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Please refer to the maps included in Appendix A, in particular the **Summary of Recommendations map.**

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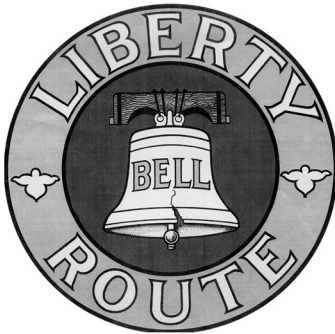
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- A. Study Corridor Maps
- B. Detailed Plan Sheets
- C. Typical Sections
- D. Norristown Farm Park Map
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1. Introduction

The concept of the Liberty Bell Trail appears in the County Open Space Plan adopted by Montgomery County in 1996, and subsequently in trail and open space studies and comprehensive plans at the regional, county, and municipal levels. Liberty Bell Trail is a component of The Circuit Trails regional trail network, comprising 25 miles of that network's envisioned 800 miles.



Also referred to as the Liberty Bell Trolley Trail, the alignment is intended to utilize, so far as possible, remnants of the Lehigh Valley Transit Company's Philadelphia Division. Built between 1900 and 1902, the trolley line's original alignment connected Allentown with Erdenheim, just across the Montgomery County line from Philadelphia's Chestnut Hill neighborhood. In 1912 a branch was constructed between North Wales and Norristown. In 1926 the branch became the main route as the North Wales to Erdenheim portion was downgraded to a bus line. The Lehigh Valley Transit Company first applied the name "Liberty Bell Route" to its Philadelphia Division in 1907, the implication being that the LVT

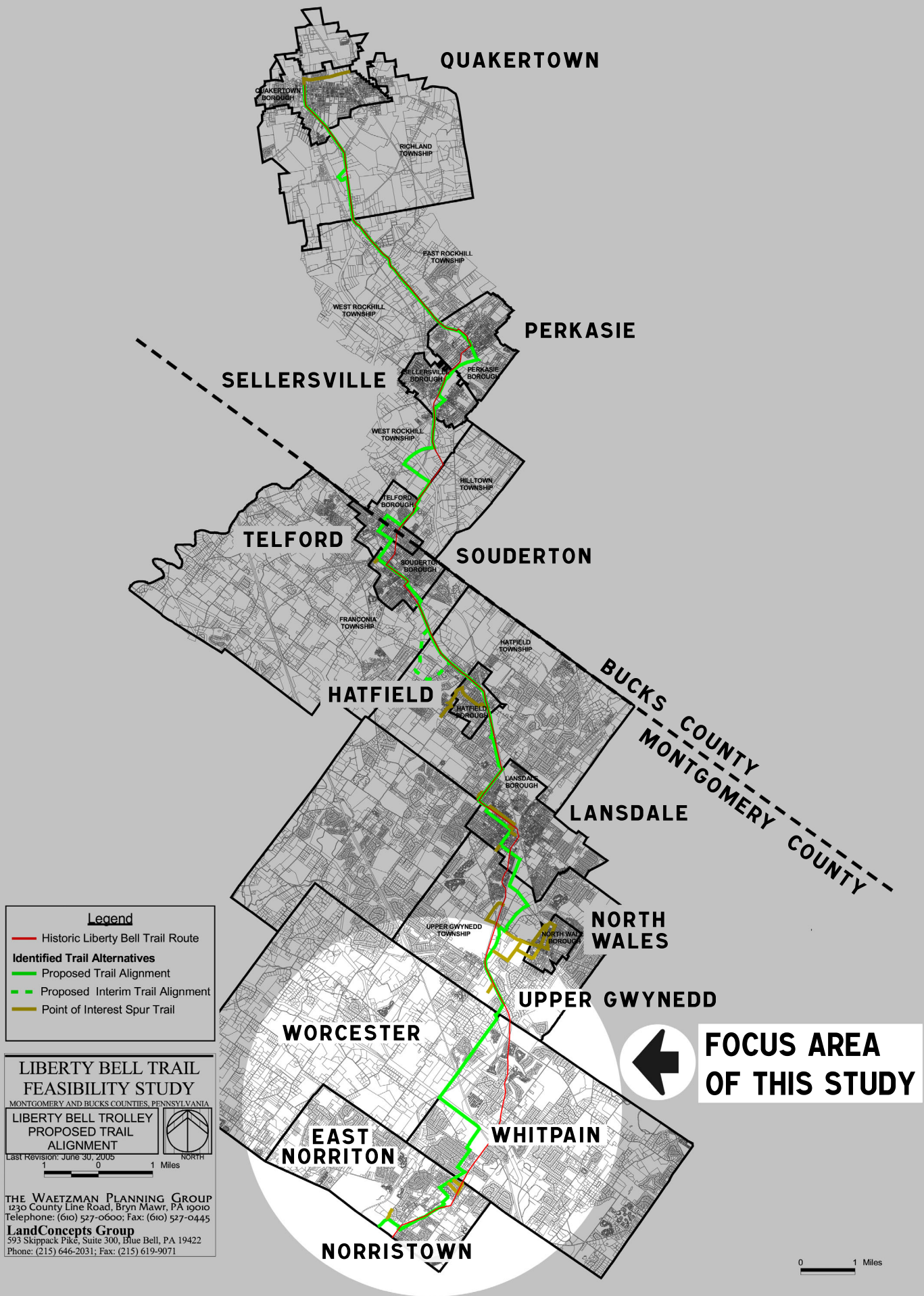
trolley line followed the historic route by which the Liberty Bell was spirited away from Philadelphia to Allentown for safekeeping during the American War for Independence. In the autumn of 1777 the 2080 pound copper alloy bell was smuggled out of the city by way of Germantown Avenue, Bethlehem Pike, and finally the road from Bethlehem to Allentown (at that time known as Northampton). In fact the Liberty Bell trolley line followed the route of the Liberty Bell for only a small part of its 62 mile journey: 5 miles between Erdenheim and Spring House in Montgomery County, and 12 miles between Perkasie and Center Valley in Bucks and Lehigh Counties. Liberty Bell Route trolleys were withdrawn in 1951.

In 2002 a three-year study was undertaken to identify potential alignments and to assess the feasibility of implementing the Liberty Bell Trail between Norristown in Montgomery County and Quakertown in Bucks County. The study area encompassed 23 municipalities in both counties, including the boroughs of North Wales, Lansdale, Hatfield, Souderton, Telford, Sellersville, and Perkasie. Published in 2005, that study's map appears on the following page, with the focus area of this report highlighted.

The 2016 Stony Creek / Saw Mill Run Greenway Plan investigated potential trail alignments in Norristown. Its recommendations are covered in the Trail Planning and Analysis chapter of this report.

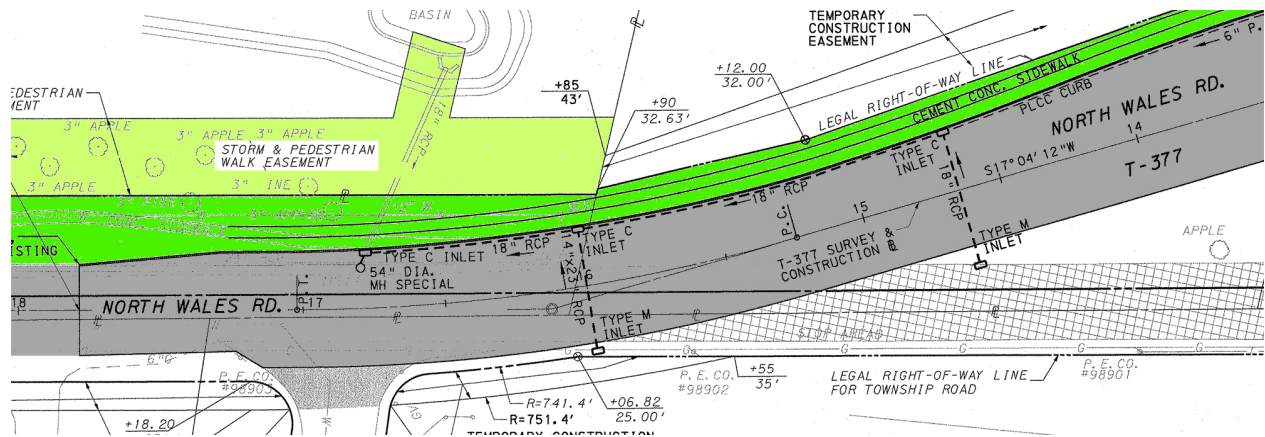
In 2021 and 2022, eight Montgomery County municipalities – with support from PEC – worked with Michael Baker International to conduct an updated feasibility study for the segment of Liberty Bell Trail from Telford Borough to Upper Gwynedd Township, adjacent to North Wales.

This 2023 study expands on the findings of previous reports, updating where conditions have changed in the intervening years. This study focusses on the southernmost portion of the Liberty Bell Trail corridor, the 8 mile long segment between Norristown and Upper Gwynedd Township adjacent to North Wales.



2. Existing Conditions

Existing conditions in the study corridor were determined by field views; reference to publicly available GIS data; construction, right-of-way, and subdivision plans obtained from PennDOT and from individual municipalities; deeds and plans procured from the Montgomery County Recorder of Deeds; railroad valuation maps; and by interviews and meetings with representatives of the local municipalities.



This excerpt of a PennDOT plan illustrates variations in the available right-of-way / easements. To the south (left side of plan) the generous 48 foot width beyond the curb-line is more than adequate for a trail. The available space abruptly narrows down to 11 feet near the center of the sheet, less than what's needed for a multi-use trail. This will necessitate the negotiation of a trail easement with the property owner to the north (right side of plan)

Topography, land use patterns, and ownership are represented on the maps and plans prepared for this study. Large scale depictions are found on plan sheets 1 through 4, and on the map explaining the potential of co-locating a segment of Liberty Bell Trail within the Norristown Farm Park trail network.

Existing conditions suggest that the study corridor may be broken down broadly into three segments, beginning at the Schuylkill River Trail in Norristown and progressing north from the SRT:

Norristown Farm Park Connector	Borough streets with signage. Sidewalks. No Bicycle facilities	plan sheet 1	1.5 miles
Norristown Farm Park	Multi-use trails closed to motor vehicle traffic	plan sheet 2	1.7 miles
North Wales Road	2-lane asphalt public road. No bicycle facilities. intermittent sidewalk	plan sheets 2, 3, 4	4.9 miles
		Total	8.1 miles

3. Green Ribbon Trail

One mile of Green Ribbon Trail, between the intersection of North Wales Road & Moyer Boulevard and Parkside Place in Upper Gwynedd Township, traverses the study area. Please refer to plan sheet 4 of 4 in Appendix B. The Green Ribbon Trail in this area follows the course of Wissahickon Creek, within the creek's flood plain and floodway, occupying property owned by the land conservation organization Wissahickon Trails (formerly known as Wissahickon Valley Watershed Association). The trail crosses Wissahickon Creek at a point midway along this segment.



Green Ribbon Trail

The crossing is made by way of a row of precast concrete stepping stones in the stream bed. Access to the stepping stones is provided by a steep wooden staircase. The trail itself is an earth-surface footpath no more than 2 feet wide in most places. Eagle Scout candidates have constructed narrow wooden boardwalks in some areas, but stretches of this trail are located in waterlogged soils that are not easily navigated, especially in winter and early spring.

Wissahickon Trails prioritizes the protection of the stream and adjacent lands, and the unimproved condition of the trail aligns with that goal. If permission were to be obtained to construct a multi-use trail on or near the Green Ribbon Trail, it would need to be an all-new facility, preferably paved with asphalt due to flooding concerns, and would require an ADA-compliant creek crossing.

This study does not recommend a Liberty Bell Trail alignment along the existing Green Ribbon Trail in this area.

4. Norristown Farm Park

Situated in the municipalities of Norristown Borough, East Norriton Township, and West Norriton Township, Norristown Farm Park is owned by the Commonwealth of Pennsylvania, administered by the Pennsylvania Department of Conservation and Natural Resources, Bureau of Public Parks. Montgomery County leases the 690 acre (1.07 square mile) park from DCNR. Montgomery County Division of Parks Trails & Historic Sites maintains and operates the park in partnership with DCNR. A network of 8 miles of paved multi-use trails traverses the park and connects with adjacent communities.

Acknowledging the need for a bicycle and pedestrian link between Norristown Farm Park and the Schuylkill River Trail, 1.5 miles of Norristown borough streets have been designated "Farm Park Connector." Cyclists share the road with motor vehicle traffic, while pedestrians utilize adjacent concrete sidewalks. Detailed description of existing conditions and discussion of potential improvements are provided elsewhere in this report. The on-street portion of Farm Park Connector ends at the terminus of Stanbridge Street, at a point ½ mile north of the intersection of Stanbridge

Street & Sterigere Street, adjacent to the Norristown State Hospital grounds. North of this point, trail users enter Norristown Farm Park.

Signage and a heavy precast concrete “bin block” prevent large motor vehicles from accessing the multi-use trail north of Stanbridge Street.

Fifty feet north of this point the trail spans the SEPTA Stony Creek Branch railroad on a wooden bridge, which carries the name Stanbridge Street Bridge. Clear space between railings measures 10 feet wide. The bridge deck and railings are wood. Signage warns that the surface may be slippery. Because the bridge railings are simple wooden planks with 18” spaces

between the boards, arranged like a split-rail fence, orange construction netting has been affixed to the railings. **These conditions are adequate for trail traffic, but replacement of the railings and the wood deck is advisable.** Any new bridge surface needs to be safe for narrow bicycle tires. Non-slip composite decking may offer both longevity and a greater degree of safety.



Farm Park Connector bridge over SEPTA Stony Creek Branch. Located in Norristown Farm Park at a point 50 feet beyond the end of Stanbridge Street



Stony Creek Road / Norristown Farm Park Connector trail runs along the creek bank close to the waters edge

of the half-mile distance is situated directly on the bank of Stony Creek, offering trail users unobstructed views of the stream as it ripples over flat sheets of exposed bedrock.

The Norristown Farm Park Connector terminates at a four-way intersection adjacent to the State Hospital steam generating power plant. The road approaching from the left (south) is part of the State Hospital internal driveway system. Signs displaying “No vehicles beyond this point” and “Authorized vehicles only” are intended to limit traffic on that driveway. The road continuing straight through the intersection (west) is Stony Creek Road. This road,

Once over the bridge, for a distance of ½ mile, trail users may use the entire width of Stony Creek Road. Closed to motor vehicle traffic, this ½ mile is signed as the Norristown Farm Park Connector. The road is shaded by mature trees for most of its length. The asphalt cartway, ranging in width between 20 and 24 feet, is in generally good condition. One relatively small area of deterioration, which in a handful of spots has resulted in potholes, should be patched. A good portion



Signage guides southbound trail users at the intersection of Upper Farm Road and Stony Creek Road. Norristown State Hospital steam generating plant at right

closed to all but authorized vehicles, is located within the Farm Park and serves as a multi-use trail. The road approaching from the right (north) is Lower Farm Road. It too is closed to traffic and is located within the Farm Park. **Lower Farm Road offers the most direct route to points north, and this study recommends its designation as Liberty Bell Trail.**



Hospital Bridge carries Lower Farm Road over Stony Creek. Concrete deterioration has necessitated the placement of fences restricting access to one half of the bridge deck

Immediately north of the intersection, Lower Farm Road crosses over Stony Creek on a two-span concrete arch bridge, known as Hospital Bridge. Precast concrete “bin blocks” deny entry to larger motor vehicles. Deterioration of this bridge has necessitated the installation of chain-link fencing that restricts trail users to one half of the bridge deck. The distance between the fences measures 10 feet, which is close but adequate for a multi-use trail. **As funding becomes available, chain link fence should be replaced with ADA-compliant bridge railings.** If additional space on the bridge deck can be re-

claimed, positioning the opposing fences 12 feet or 14 feet apart would be advantageous.

Once across Hospital Bridge, the recommended trail alignment follows Lower Farm Road for a distance of 4900 feet (just under a mile). Like Stony Creek Road, this 20 foot wide asphalt road is closed to motor vehicle traffic. The pavement is in good condition. Trailside picnic tables, park benches, and portable toilets (port-a-johns) are provided. Trending uphill through a patchwork of woodland and open cultivated fields, for most of its length Lower Farm Road is shaded by mature trees. The uphill gradient approaches 8% for a short distance. Half a mile north of Hospital Bridge, Lower Farm Road reaches a trail intersection offering connections to the nearby East Norriton Township municipal complex, park, ballfields and historic Norris Hills Cemetery.



Lower Farm Road trends generally uphill as one proceeds north through Norristown Farm Park

A quarter mile north of the trail junction, Lower Farm Road crosses Stony Creek on a span known locally as the Meadow Bridge. Chain link fence has been installed along both parapets of this bridge, as the original steel pipe railings are missing / damaged. Distance between these fences measures 14 feet.



Lower Farm Road follows along the edges of farm fields. The 24 foot wide roadway is closed to motor vehicle traffic

North of Meadow Bridge, Lower Farm Road climbs out of the stream valley on a long hill, a significant portion of which maintains a 9% grade. At the crest of the hill, Lower Farm Road terminates at a T-intersection with Upper Farm Road. Warning signage and a painted crosswalk facilitate trail users continuing across the intersection with Upper Farm Road. After navigating an asphalt switchback connection, northbound trail users turn right on the Upper Farm Road side path.

The side path along Upper Farm Road is a segment of the Norristown Farm Loop trail. **The recommended Liberty Bell Trail alignment co-locates on this 12 foot wide asphalt trail along the edge of a large cultivated field for a distance of 1500 feet** (a little over a quarter mile). The side path's asphalt pavement is deteriorated in places, most notably where it runs in close proximity to an allée of mature sycamore trees. Tree roots beneath the trail have pushed up the asphalt and broken it, resulting in a cracked trail surface that has the potential to cause walkers to trip and cyclists to lose their balance and fall. Conditions are marginal now, and are sure to progressively worsen if no action is taken.



The side path along Upper Farm Road brings trail users to north end of the Farm Park, near the signalized intersection of North Wales Road and Germantown Pike



Tree roots erupting through the asphalt trail surface pose a potential hazard

If the existing trail were to be simply overlayed with fresh asphalt, after a year or two the tree roots will resume dismantling the trail surface. In order to prevent this, shallow roots may be sawed off before they reach the trail, with the severed roots beneath the trail excavated and replaced with suitable fill (compacted crushed stone). A subsurface root barrier may be placed along the trail to prevent further root growth beneath the trail. Sycamores are a native species; with that in mind if this solution were selected the work should be carried out by a knowledgeable

arborist so as to minimize potential harm to the trees.

Another option is the careful excavation of the existing trail in this area, with a replacement trail built parallel to but slightly to the west. The new trail should be located outside the drip edge of the trees, beyond the reach of the roots.

Adjacent to the motor vehicle entrance to the Farm Park, a short section of connector trail offers trail users access to Barley Sheaf Drive. The 10 foot wide asphalt connector opens onto a 4 foot wide concrete sidewalk. Walking a distance of 330 feet on this sidewalk brings pedestrians to the signalized intersection of Germantown Pike and North Wales Road.

While the pedestrian connection to Barley Sheaf Drive is adequate, the connection for bicyclists is not. The 10 foot wide asphalt connector trail leads cyclists directly to a 6" high concrete curb. This curb delineates the west edge of the 32 foot wide cartway of Barley Sheaf Drive. **This study recommends the removal of the existing curb and adjacent concrete, and the installation of an ADA-compliant curb cut with DWS.**



6" high concrete curb blocks the connection between the Upper Farm Road side path and Barley Sheaf Drive. This curb should be removed and replaced with an ADA-compliant curb cut

A detailed map showing the recommended trail alignment through Norristown Farm Park, along with a potential trail signage layout, is provided as in Appendix D of this report.

5. Environmental Assessment

Wetland maps, a PNDI conservation report, a map of potential threatened and endangered (T&E) species, and two cultural resources maps are provided in Appendix F.

Additional info:

Wetlands - The project corridor was investigated for wetlands using the online wetland mapper from the National Wetlands Inventory. Based on these maps, there are several areas that would have to be checked for wetlands as design progresses:

- Stony creek crossing near Pulaski Drive
- Stony Creek crossing near Cassel Rd
- Wissahickon Creek crossing near Moyer Blvd.

PNDI / Threatened and Endangered (T&E) species - An area that may need additional investigation during the design phase is along Stony Creek, by the intersection of N Wales Road, and Bean Road.

Cultural Resources - CRGIS Map Legend

- All Purple "surveyed areas" are areas that have been surveyed for archeological significance.
- Bridge points and polys are bridges that have been reviewed and are not eligible for listing as historic.
- Undetermined means the historical significance is unknown at this time.
- Listed means it IS historically significant.
- Eligible means it is *likely* historically significant but hasn't received a final stamp yet.

- Aggregate is for extremely large areas that span multiple counties or states. At least some part of it is considered historically significant.
- HDA is considered LOCALLY historically significant.

6. Right of Way

The right-of-way for the first segment, streets designated as Norristown Farm Park Connector, coincides with the right-of-way widths of the **Norristown** streets that are signed as on-road facilities. These are Haws Avenue between Washington Street and Beech Street, one block of Beech Street between Haws Avenue and Stanbridge Street, and Stanbridge Street from Beech Street to the street's end at a point ½ mile north of Sterigere Street. All of Haws Avenue and Beech Street, and most of Stanbridge Street are lined with closely spaced residential lots ranging from 19th century rowhouses to postwar multifamily dwellings. Right-of-way lines are typically coincident with (or 1 foot beyond) the outside edges of sidewalk. In general, all available right-of-way is occupied by curbed cartway, concrete sidewalks, and narrow grass strips that on some blocks serve as rainwater absorption areas for mature street trees.

An exception to this situation is the ½ mile long final block of Stanbridge Street. That street's west side, where it abuts the former Norristown State Hospital grounds currently owned by the Redevelopment Authority of Montgomery County, is a 15 foot wide grass strip. Because the curb on this side of the street is broken or missing for much of its length, and parking rules are apparently not enforced, this ½

mile long grass strip is utilized as motor vehicle parking by residents and by employees and customers of nearby businesses.



North Wales Road between Avon Road and Marcia Road in East Norriton Township

The right-of-way along North Wales Road in **East Norriton Township** varies in width, but in most places extends only 1 foot beyond the outside edge of existing concrete sidewalks. This 0.9 mile long section of road is fronted by 36 dwellings on the east side, and 42 dwellings on the west side. These dwellings occupy quarter-acre lots with average 75 foot frontage. Sidewalk is continuous except for two

missing segments: a 250 foot long section between Avon Road and Marsha Road, and a 650 foot long section between Baldwin Avenue and Township Line Road. The dense suburban development pattern and right-of-way constraints are factored into the analysis portion of this report.

The right-of-way along North Wales Road in **Worcester Township** also varies, but is in many places 80 feet wide (40 feet half-width). More recent subdivisions (those approved from the 1990s onward) were required to provide 40 feet of public right-of-way as measured from North Wales Road's centerline. Earlier subdivisions set aside 30 feet half-width. Two subdivisions provide a trail easement along North Wales Road in addition to public right-of-way. Where PennDOT realigned intersections (at Township Line Road and at Morris Road) the right-of-way take was limited to a line 1 foot beyond the curb line, or a similar distance beyond the outer edge of sidewalk where there is sidewalk. Parcels that may require the negotiation of trail easements are highlighted in yellow on the plan sheets and are numbered. The

numbers correspond with a spreadsheet listing detailed information about these parcels. The spreadsheet is included in the appendix of this report.

By ordinance, Worcester Township established a 40-foot *ultimate* half right-of-way the full length of North Wales Road.

In summary, 2.9 miles of the study corridor traverses Worcester Township. Of that distance, 2.5 miles of North Wales Road currently has enough right-of-way to place a multi-use trail that meets Circuit and PennDOT standards. 0.4 miles of North Wales Road right-of-way is too narrow for a trail, so a trail easement will need to be negotiated with 12 Worcester Township property owners. Please refer to plan sheets 2, 3, and 4, and the spreadsheet included in Appendix E.



North Wales Road north from Pond View Drive in Worcester Township. Available right-of-way extends 40 feet from the road centerline

The right-of-way along North Wales Road in **Upper Gwynedd Township** varies in width. Much of the west side of the road has been developed as suburban subdivisions, and as a condition of those approvals developers set aside a 35 foot half right-of-way as measured from the road centerline. The 35 foot half right-of-way provides sufficient space for the implementation of a multi-use trail. However, there are stretches of North Wales Road in Upper Gwynedd Township where available right-of-way is insufficient. The parcels fronting on these stretches are highlighted yellow on the plan sheets and

appear in the right-of-way spreadsheet included in Appendix E.



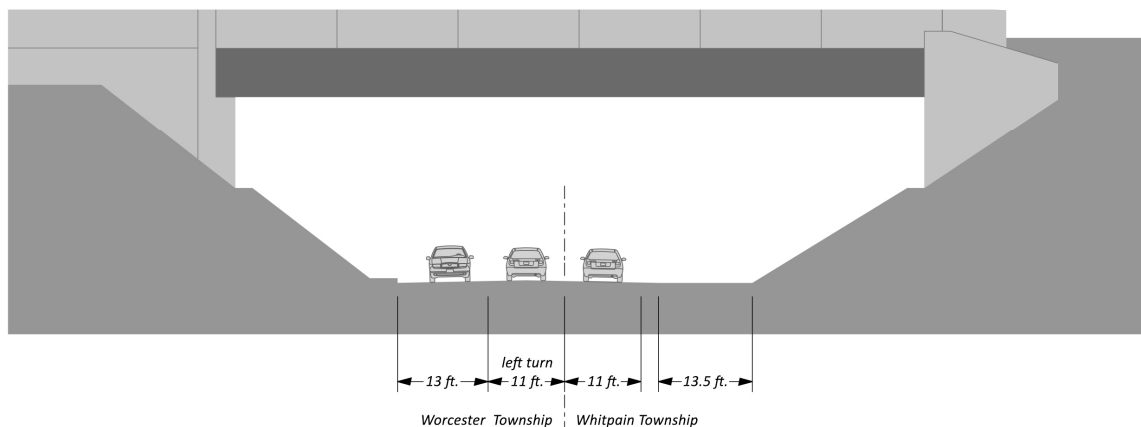
Two stretches of North Wales Road in Upper Gwynedd Township are only 22 feet wide with no sidewalks. One stretch does not have, and the other may have, sufficient right-of-way for a trail

In summary, 1.1 miles of the study corridor traverses Upper Gwynedd Township. Of that distance, 0.8 miles of North Wales Road currently has enough right-of-way to place a multi-use trail that meets Circuit and PennDOT standards. 0.3 miles of North Wales Road right-of-way is too narrow for a trail, so a trail easement will need to be negotiated with 6 (but as many as 12) Upper Gwynedd Township property owners. Please refer to plan sheet 4, and the right-of-way spreadsheet included in Appendix E.

The right-of-way along North Wales Road in **Whitpain Township** varies in width. The segments of multi-use trail already built along North Wales Road are on the west (Worcester) side of the road. However, the space set aside for the trail at the point where North Wales Road passes beneath the Pennsylvania Turnpike Northeast Extension is on the east (Whitpain) side of the road. If the trail is placed within the space set aside under the Turnpike, the trail will be located in Whitpain Township for a short distance. One potential alignment has the trail cross from Worcester into Whitpain at the signalized intersection

of North Wales Road & Skippack Pike (PA Route 73), pass beneath the turnpike, remain on the Whitpain side to a point 800 feet south of the Skippack Pike intersection, and cross back over into Worcester Township to continue on an already-existing 12 foot wide shared use path. The 800 feet in Whitpain Township is owned by the Pennsylvania Turnpike Commission. The legal half right-of-way here is 40 feet wide, which is adequate for a multi-use trail that meets Circuit and PennDOT requirements.

In order for the trail to remain in Worcester Township (on the west side of North Wales Road), thereby avoiding the crossing and re-crossing of North Wales Road, significant earthwork will need to be done beneath the turnpike overpass. As constructed, a fill embankment was placed against the west abutment of the turnpike bridge, extending from near the edge of North Wales Road to a point halfway up the abutment wall. Depending on how the bridge abutment was designed, it may or may not be prudent to disturb the fill embankment. If removal of a portion of the fill embankment on the west side of North Wales Road may be accomplished with no adverse effects on the bridge abutment, the trail may be placed on the Worcester side of the road. A retaining wall would need to be constructed between the abutment wall and the trail. The figure below illustrates existing conditions at the Turnpike bridge.



This view looks north at the point where North Wales Road passes beneath the Pennsylvania Turnpike Northeast Extension. There is space for the trail on the Whitpain Township side of the road. If the trail were to be placed on the Worcester side, a portion of the fill embankment will need to be excavated and replaced with a retaining wall

7. SEPTA Railroad crossings

North Wales Road crosses SEPTA's Stony Creek Branch at three places. Two are at-grade crossings on the shared boundary between Worcester and Whitpain Townships. The third is a highway overpass that carries North Wales Road over the railroad in Upper Gwynedd Township.

The two grade crossings will require improvements to accommodate the trail. At the present time the roadway narrows at the crossings. The more northern of the two crossings (between Yost Road and Skippack Pike) is in poor condition, with both the road pavement and rails in need of repair or replacement. It is evident that excessive stormwater runoff washes over that crossing, carrying with it

gravel that accumulates along the roadway. Engineering of the improved crossing should include reevaluation of the drainage in that area. At that northern grade crossing the tracks cross the road at a skew angle, which poses a danger to cyclists because bicycle wheels may be caught by the rail and abruptly twisted to one side, causing a fall and possible injury. If topography and available right-of-way allow, the northern crossing the trail should diverge from the roadside for a short distance so that the trail crossing can be made an angle closer to 90 degrees.



This graphic depicts recommended improvements to two grade crossings of SEPTA's Stony Creek Branch. This is the southernmost of the two crossings, on North Wales Road between Brindle Court and Pulaski Drive. Existing conditions are shown at right



The North Wales Road overpass over the SEPTA Stony Creek Branch in Upper Gwynedd Township was constructed in 1992. It consists of a 34 foot roadway and one 6 foot sidewalk on the west side. This study explored three potential solutions for this crossing. One narrows the trail down to 6 feet width so that the existing sidewalk is utilized. In this scenario, signage advises cyclists to dismount and walk their bicycles over the bridge. A second solution reallocates the existing bridge deck. This would taper the existing shoulders down to zero, provide two 13 foot wide motor vehicles lanes, a fixed concrete barrier between the trail and roadway, and a 12 foot wide trail surface. A third solution does not alter the existing bridge, instead providing a new prefabricated 12 foot wide trail bridge alongside the existing bridge. Please refer to Appendix C to view graphical representations of the existing bridge and the three alternate solutions.

8. Trail Planning and Analysis

Beginning in the 1990s, 1.5 miles of borough streets in Norristown have been designated Norristown Farm Park Connector. This provides a link between the Schuylkill River Trail in Norristown's West End, with Norristown Farm Park. The streets (Haws Avenue between Washington Street and Beech Street, one block of Beech Street between Haws Avenue and Stanbridge Street, and Stanbridge Street between Beech Street and a point ½ mile north of Sterigere Street) do not include bicycle infrastructure, but were provided with directional signage. In the intervening years signs have been damaged or are missing. **This study recommends the replacement of the existing signs with updated signage.**

Between Airy Street and Elm Street, a distance of 0.4 miles, the east side of Haws Avenue is striped for nose-in angle parking. These spaces are heavily utilized by local residents, so their conversion to standard parallel parking isn't likely. **Because motor vehicles backing out of these spaces risk backing into northbound cyclists, it is recommended that the existing pavement markings be removed, and new markings implemented along with signage requiring motorists to back into the diagonal spaces, rather than parking "nose-in."** This solution has been implemented elsewhere in Montgomery County (downtown Pottstown's High Street).



0.4 miles of Haws Avenue is striped for angle parking on the east side. This view is north at Oak Street

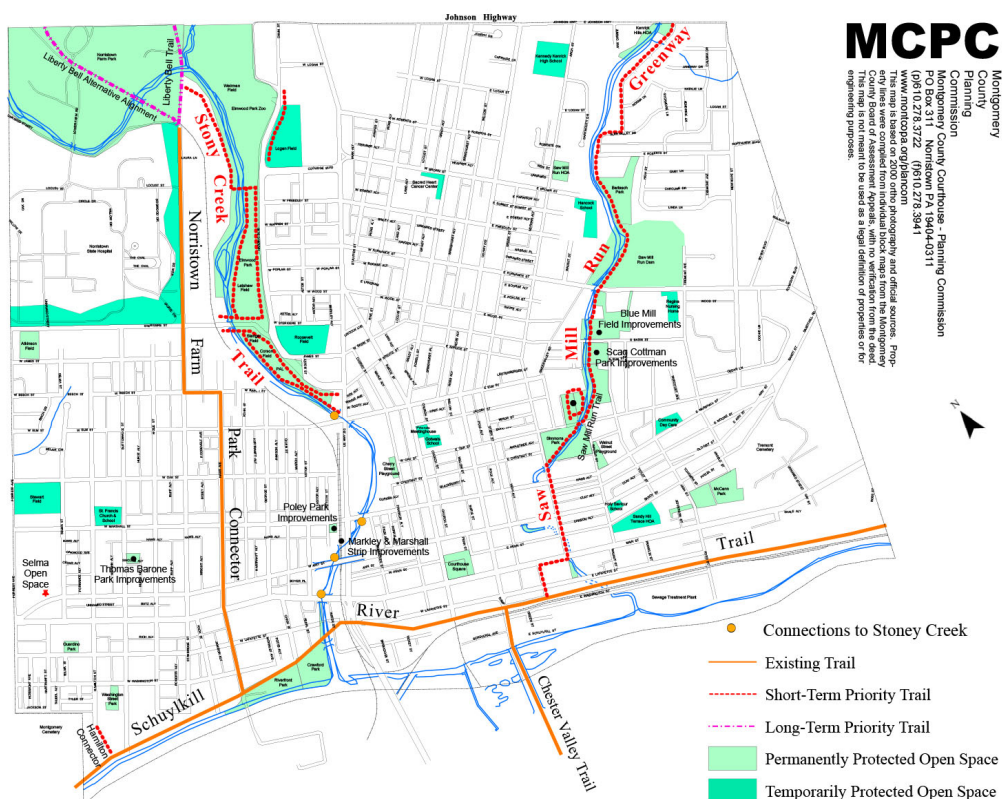


Parking on Stanbridge Street north of Sterigere Street

Available cartway widths of Haws Avenue are not conducive to the implementation of painted bike lanes. **This study recommends the implementation of "Sharrow" pavement markings in addition to signage.** Please refer to the detailed illustrations provided in Appendix C.

The one-half mile of Stanbridge Street north of Sterigere Street is unique in that the west side of the street fronts on the former Norristown State Hospital grounds. A hundred-plus year old high iron fence runs along the frontage, along a line fifteen feet beyond the edge of the street. This strip is utilized as parking by local residents, and by employees and customers of local businesses. **This report recommends the construction of a full-height concrete curb on the west side of the street, enforcement of parallel parking restricted to the street side of said curb, and the implementation of a multi-use trail on the strip of right-of-way between the iron fence and the street.** As an interim solution before a trail can be implemented, signage and Sharrow pavement markings should be provided. Please refer to the detailed illustrations provided in Appendix C.

The 2016 Stony Creek / Saw Mill Run Greenway plan envisions a shared-use path located on borough parkland on the banks of Stony Creek, roughly parallel to the on-street Connector. Due to the lack of a feasible way to extend the proposed trail to connection with the Schuylkill River Trail, Norristown Borough Open Space Plan sets the Stony Creek Trail's southern terminus on the west side of Harding Boulevard adjacent to its intersection with Markley Street. The 2016 study imagined pushing the trail through congested land uses somewhat farther south, but not all the way to the SRT. North from the Harding Boulevard Markley Street intersection, the Stony Creek Trail follows the east bank of Stony Creek, crosses Sterigere Street at grade, continues through Elmwood Park adjacent to Norristown Zoo, crosses Stony Creek on a new bridge before tying into the Norristown Farm Park at a point just north of the Stanbridge Street trail-head. This alignment of Stony Creek Trail, particularly the segment north of Sterigere Street, may be considered as a potential future off-road alignment for the section of Norristown Farm Park Connector on Stanbridge Street. Please refer to the Norristown Open Space Plan map below.



Norristown Open Space Plan RECOMMENDATIONS

The Saw Mill Run Greenway is envisioned as an on-road facility on Arch Street in Norristown's East End. After a quarter mile on the 26 foot wide street (with parking on one side) the trail leaves the roadway and follows Saw Mill Run through a concatenation of municipal and state-owned parcels, ending at Johnson Highway near North Hills Drive. The intersection of North Hills Drive and Johnson Highway is one mile (1.0 mi.) from Elmwood Park Zoo's parking lot entrance, which is across Stony Creek from Norristown Farm Park. Of that one mile of Johnson Highway, which straddles the boundary between the

Municipality of Norristown and East Norriton Township, one half mile (0.5 mi.) is designated U.S. 202 South and carries an average daily traffic volume of 9500, a significant portion of which is trucks. Both sides of the roadway are punctuated by frequent curb cuts which motor vehicle traffic utilizes for ingress and egress from commercial properties. This generates a significant amount of cross traffic and left turns. DVRPC's level of stress map rates the half mile of Johnson Highway between Markley Street and Dekalb Street as red, the most stressful of four categories, defined as appropriate for strong and fearless bicyclists.



Johnson Highway (US 202 South) looking west from Pine Street

The ¼ mile block of Johnson Highway between Old Arch Road and North Hills Drive has been provided with non-buffered bike lanes.

The potential for an entirely off-road alignment in East Norriton was explored but no feasible alignment was found. As previously described in Section 6, the 0.9 mile segment of North Wales Road in East Norriton Township isn't conducive to implementation of an off-road facility such as a side path. Posted speed limit is 25 mph. The cartway varies in width from 28 feet to 36 feet, the former being narrow but adequate for implementation of **bike lanes and signage**. **Two relatively short sections of missing sidewalk should be constructed.** Please refer to illustrations provided in Appendix C.

The next 2.9 miles of study corridor, from Township Line Road to Morris Road, follows North Wales Road, a township road the maintenance of which is shared between Worcester Township (west side) and Whitpain Township (east side). Posted speed limit is 35 mph. As explained in Section 6 of this report, Worcester Township has for over thirty years required developers to dedicate a 40 foot wide half right-of-way in those areas where subdivisions are granted. In addition, township ordinance calls for a 40 foot half *ultimate* right-of-way line on Township Line Road. Developers have built various side paths and sidewalks along their respective portions of North Wales Road, ranging from 6 foot asphalt paths to 12 foot asphalt paths to 4 foot concrete sidewalks. Along North Wales Road, Whitpain Township has done less in this regard. **This study recommends completion of a 10 to 12 foot wide asphalt side path along the Worcester side of North Wales Road.** Existing trails will be utilized where possible and widened where practical. Where sufficient right-of-way is available, new multi-use trail may be built adjacent to existing sidewalks, thereby offering both a pedestrian and a bicycle facility. This study has identified the available right-of-way along each parcel fronting North Wales Road, and identified those parcels that will require negotiation of easements if a continuous multi-use trail is to be implemented. These are tabulated in Appendix E and highlighted on the detail plan sheets (Appendix B).

Two new trail bridges will be required where North Wales Road crosses Stony Creek: one between Brindle Court and Pulaski Drive, and one just south of Cassel Road. Because they will be parallel to and in close proximity to the road, the new bridges' load rating will not need to support the weight of full-

size motor vehicles such as ambulances. Prefabricated single-span truss bridges may be appropriate and cost effective.

Where North Wales Road passes beneath the Pennsylvania Turnpike Northeast Extension, space for a side path was provided on the east (Whitpain) side of the road, but not the west (Worcester) side. If the earth fill against the west turnpike bridge overpass can be excavated and a trail placed next to the road there, the trail may remain on the Worcester side. If this earthwork is not practical due to the design of the turnpike overpass abutment, the trail will need to cross and re-cross North Wales Road at the signalized intersection with Skippack Pike, and at a point 800 feet south. This would require a mid-block crossing, preferably equipped with an RRFB flashing signal. This 800 feet in Whitpain Township is owned by the Pennsylvania Turnpike Commission, set back from the road by a 40 foot wide half right-of-way so that a trail easement will not be required. Please refer to detailed illustrations provided in Appendix C.

1.2 miles of the study corridor is within Upper Gwynedd Township. North Wales Road is posted for a 40 mph speed limit, with traffic volume AADT 6300 (year 2021). Like Worcester Township, the municipality has for decades required developers to dedicate extra right-of-way along North Wales Road, which may be utilized for implementation of a multi-use trail. Concrete sidewalk has been constructed along several stretches of North Wales Road and is well utilized by local residents. As in Worcester Township, because a number of the properties fronting North Wales Road were built before regulations requiring the dedication of additional right-of-way beyond the default colonial-era 16.5 or 20 foot half-width, the available right-of-way and the existing sidewalks are discontinuous. Easements will need to be negotiated with these property owners, as described in Section 6 above. The properties are tabulated in Appendix E and highlighted on plan sheet 4 (Appendix B).

Two structures will need to be constructed in Upper Gwynedd Township: one to carry the trail over the SEPTA Stony Creek Branch railroad, and one over Wissahickon Creek just north of Moyers Boulevard. As an alternative to the construction of trail bridges parallel to the road, the existing bridge decks are of sufficient width that space may be reallocated on them for the trail. This would involve shifting the motor vehicle lanes, eliminating the shoulders but widening both lanes to 13 feet, placing a fixed barrier, and providing a 12 foot wide trail on the west side in place of the present 6 foot sidewalk. Because PennDOT may require significant modifications to the concrete structure, the cost may be comparable to that of a new parallel trail bridge. Please refer to the detailed illustrations in Appendix C.

Low volume neighborhood streets may serve as an interim on-road route, between the intersection of North Wales Road & Old Church Road, and Parkside Place. 0.6 miles along Old Church Road, Gage Lane, Shearer Street, and Clover Drive in the 1980s vintage Clover Crest Farm subdivision bring trail users to a 200 foot long concrete walk that links Clover Drive with the existing 10 foot wide asphalt trail within Upper Gwynedd's Parkside Place park. This potential on-road linkage is shown on detail plan sheet 4 in Appendix B.

Of significance is the fact that prior studies have recommended the designation of the asphalt trail within Parkside Place as both Power Line Trail and as Liberty Bell Trail.

9. Recommendations, organized from south to north:

Municipality of Norristown

- Farm Park Connector is already an on-road route on 1.5 miles of West End streets: Haws Avenue, Beech Street, Stanbridge Street
- Replace existing signs with updated signage
- Add “Sharrow” pavement markings
- Reorient angle parking so that motorists must back in, rather than back out
- Long Term Recommendation: construct multi-use trail on west side of Stanbridge Street between Sterigere Street and a point ½ mile north of Sterigere Street

Norristown Farm Park

- Coordinate with Montgomery County and DVRPC to co-locate Liberty Bell Trail on 1.7 miles of existing Farm Park multi-use trails
- Provide directional signage
- Suggest replace wood deck and railings on Stanbridge Street trail bridge
- Suggest install bridge railings and remove temporary fence on Hospital Bridge
- Suggest ameliorate tree root destruction of trail surface on 700 foot long section of Farm Park Loop trail
- Provide ADA-compliant curb cut where Farm Park Loop trail connects to Barley Sheaf Drive

East Norriton Township

- Provide painted bike lanes and signage on 0.9 miles of North Wales Road between Germantown Pike and Township Line Road

Worcester Township

- Provide a 2.9 mile long 10 foot wide asphalt multi-use trail on the west side of North Wales Road, between Township Line Road and Morris Road. Maintain a minimum 5 foot space between the trail and the edge of roadway
- Provide two at-grade trail crossings of SEPTA’s Stony Creek Branch railroad adjacent to the existing roadway grade crossings
- Provide two trail bridges across Stony Creek parallel to North Wales Road:
 - 250’ south of Pulaski Drive
 - 150’ south of Cassel Road
- If feasible, excavate beneath the Pennsylvania Turnpike Northeast Extension bridge over North Wales Road to create space for the multi-use trail on the Worcester side of North Wales Road
 - If that’s not feasible, utilize the space provided on the Whitpain side of the road. This will require crossing at the signalized intersection of North Wales Road & Skippack Pike (PA 73) and re-crossing at a new mid-block crossing 800 feet south of the intersection
- Utilize two segments of existing 12 foot wide asphalt trail, totaling ¼ mile, adjacent to Cassel Road

- Place the multi-use trail alongside existing 4' wide concrete sidewalks along North Wales Road where space allows
 - Otherwise replace sidewalk with trail
- Negotiate with 12 property owners to obtain trail easements for those locations where there is insufficient right-of-way

Whitpain Township

- Provide 800 feet of 10 foot wide asphalt multi-use trail on the east side of North Wales Road between Skippack Pike (PA 73) and a point 800 feet south of the intersection. Maintain a minimum 5 foot space between the trail and the edge of roadway
 - A new mid-block crossing with RRFB flashing beacons will be necessary at the latter point.

This 800 foot long segment of trail (and crossings) will only be necessary if excavation beneath the Pennsylvania Turnpike bridge over North Wales Road is found to be infeasible

Upper Gwynedd Township

- Provide 1.2 miles of 10 foot wide asphalt multi-use trail on the west side of North Wales Road between Morris Road and West Street. Maintain a minimum 5 foot space between the trail and the edge of roadway
- Provide two trail bridges adjacent to North Wales Road bridges:
 - Bridge over SEPTA Stony Creek Branch railroad
 - Bridge over Wissahickon Creek
 - Alternate: the existing North Wales Road bridges are sufficiently wide that the motor vehicle lanes may be shifted to the east, providing space on the bridge for a multi-use trail and concrete barrier.
- In lieu of constructing the multi-use trail north from Old Church Road to the boundary with North Wales Borough at West Street, 0.6 miles of residential streets may be signed to direct trail users from North Wales Road to Parkside Place by way of a neighborhood public access point on Clover Drive
- Provision of a multi-use trail along the alignment of the Green Ribbon Trail is not recommended
- Negotiate with 6 (and possibly 12) property owners to obtain trail easements for those locations where there is insufficient right-of-way

10. Implementation

The following list represents the order in which the projects may feasibly be constructed. The proposed trail network outlined in this study is broken into manageable construction projects based on starting points, ending points, connections, funding sources, and overall cost.

Project #	Project Description	Funding Source
1	Norristown Connector Share the Road	DCNR / Local
2	Norristown Farm Park Signage; East Norriton on-road	PennDOT MTF / DCED MTF / Local
3	N Wales Road – Township Line to Cassel Road (2 bridges, 2 at grade rail crossings, 10 easements)	TASA / PennDOT + DCED Multimodal
4	N Wales Road - Cassel Road to Long Meadow Road (RRFB, 1 easement)	DCNR (Local Park Connections)
5	N Wales Road – Long Meadow Road Morris Road (2 easements)	DCNR (Local Park Connections)
6	N Wales Road – Morris Road to Parkside Place (2 bridges, 13 easements)	TASA / PennDOT + DCED Multimodal

Funding Options

Securing adequate funding for the design and construction of these types of projects can be a challenge. The following is a list of possible funding sources for this project:

Pennsylvania Transportation Alternatives Program

There will be one solicitation for two years of TAP funding totaling \$7.5 million in the DVRPC Pennsylvania counties (Bucks, Chester, Delaware, Montgomery and Philadelphia) for bicycle and pedestrian facilities, conversion of abandoned railway corridors to trails, and stormwater management projects. Concurrently the statewide TAP will have \$26 million available for all eligible project types. There will be one application and projects may be selected as either regional or statewide priorities. Local governments, regional transportation authorities, transit agencies, natural resource or public land agencies, school districts, local education agencies, or schools, and tribal governments are eligible to apply for the competitive TAP funds.



<https://www.penndot.gov/ProjectAndPrograms/Planning/Pages/Transportation-Alternatives-Program.aspx>

<https://spportal.dot.pa.gov/Planning/AppReg/TAP/Pages/default.aspx>

DCED Act 13 Grants: Greenways, Trails and Recreation Program (GTRP)

Act 13 of 2012 establishes the Marcellus Legacy Fund and allocates funds to the Commonwealth Financing Authority (the “Authority”) for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects using the Greenways, Trails and Recreation Program (GTRP).

<http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/greenways-trails-and-recreation-program-gtrp>

DCED 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.

<https://dced.pa.gov/programs/multimodal-transportation-fund/>

PennDOT Multimodal Transportation

Act 89 also established a dedicated Multimodal Transportation Fund that stabilizes funding for ports and rail freight, increases aviation investments, establishes dedicated funding for bicycle and pedestrian improvements, and allows targeted funding for priority investments in any mode.

<https://www.penndot.gov/ProjectAndPrograms/MultimodalProgram/Pages/default.aspx>

PENNDOT – Surface Transportation Program

The Twelve Year Transportation Program (as required by Act 120 of Pennsylvania State Law and its amendments) targets the Commonwealth's improvement efforts in all major transportation modes:

highways, bridges, aviation, rail and transit. Transportation projects that focus on improving safety, enhancing mobility, moving goods and preserving the existing system are key to achieving the Department's goals and objectives. The Division will continue to focus on incorporating the philosophy of the most current Federal and State Regulations in the continuous update of the Program; this includes the tie-in of planning requirements for Transportation Improvement Plans (TIPs), and the all encompassing State TIP (STIP).

This program also involves the preparation of comprehensive information packages for key Department staff, the State Transportation Commission (STC), and elected state and federal legislators and officials. These packages facilitate and communicate the development of a transportation system responsive to the needs of the Commonwealth, monitors progress on key programs and projects, and aids in resolving outstanding Transportation Program issues. Staff and support services are also provided to the STC and other Program Center functions to prepare improvement programs which maintain and enhance the existing transportation system.



<http://www.dvrpc.org/TIP/>



Robert Wood Johnson Foundation

The mission of the Robert Wood Johnson Foundation is to improve the health and health care of all Americans. Our goal is clear: To help our society transform itself for the better.

Website: <http://www.rwjf.org/grants/>

William Penn Foundation

The William Penn Foundation, founded in 1945 by Otto and Phoebe Haas, is dedicated to improving the quality of life in eastern Pennsylvania through efforts that foster rich cultural expression, strengthen children's futures, and deepen connections to nature and community. In partnership with others, the Foundation works to advance a vital, just, and caring community.



<http://www.williampenfoundation.org/Grants.aspx>



National Parks Service – Trails Assistance Program

The Rivers, Trails, and Conservation Assistance Program is the community assistance arm of the National Park Service. RTCA supports community-led natural resource conservation and outdoor recreation projects. RTCA staff provides technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.

Website: <http://www.nps.gov/ncrc/programs/rtca/>

PA Department of Conservation and Natural Resources – Keystone Grant Program and Recreational Trails Program

Established on July 1, 1995, the Pennsylvania Department of Conservation and Natural Resources is charged with maintaining and preserving the 117 state parks; managing the 2.1 million acres of state forest land; providing information on the state's ecological and geologic resources; and establishing community conservation partnerships with grants and technical assistance to benefit rivers, trails, greenways, local parks and recreation, regional heritage parks, open space and natural areas.

Local governments, county governments and non-profit organizations can apply for Community Conservation Partnerships Program (C2P2) funding to assist them with

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August 2023*



addressing their recreation and conservation needs as well as supporting economically beneficial recreational tourism initiatives.

Website: <https://www.dcnr.pa.gov/Communities/Grants/TrailGrants/Pages/default.aspx>

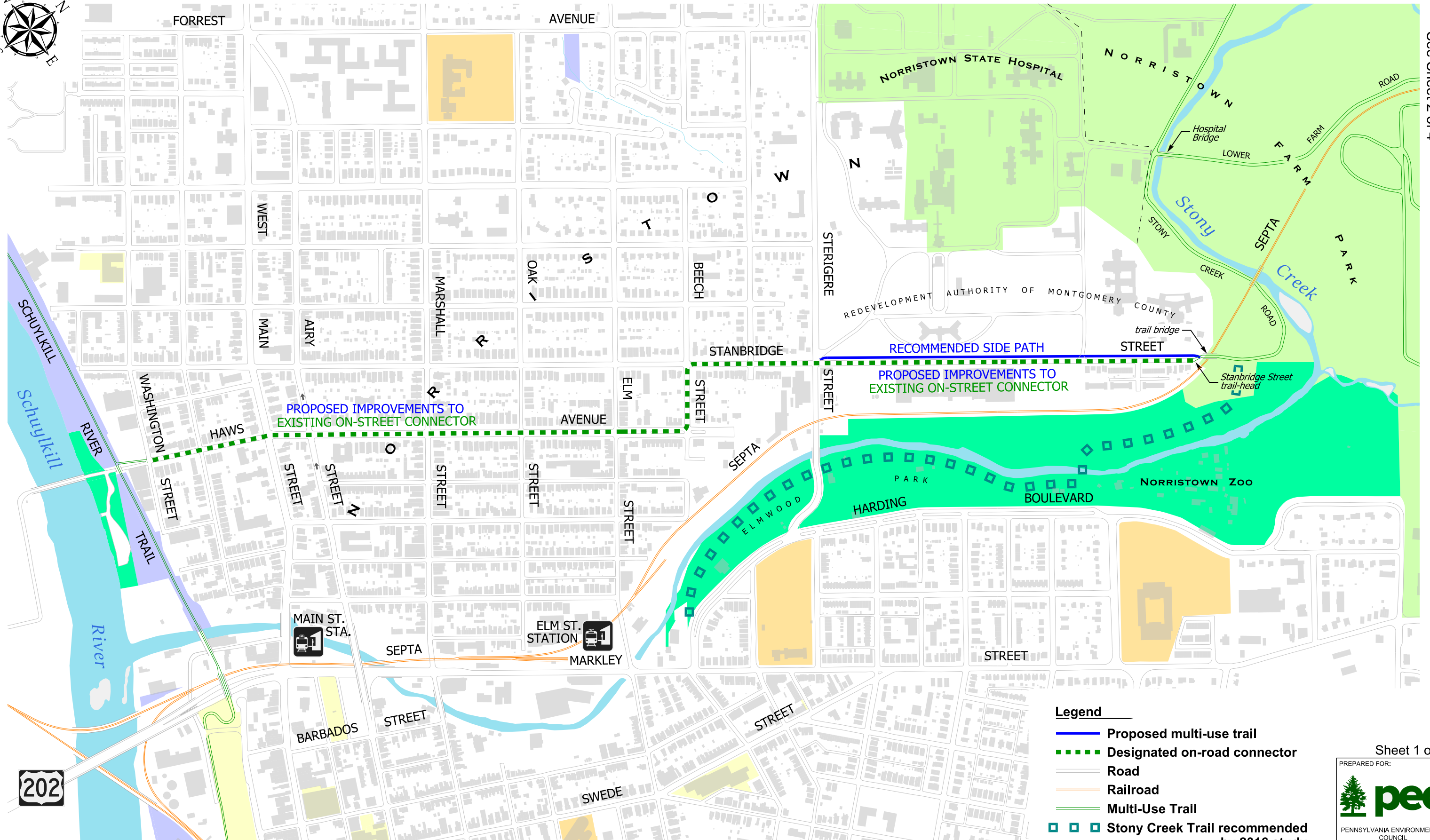
Contact:

Northeast Regional Office: (Region 2)

Lorne Possinger..... 610-746-5607.....Recreation and Conservation Manager

The following local funding sources may also be available:

- County, City, Borough and Township funds
- Private sponsorships, local fund raisers, etc.
- County Open Space funds

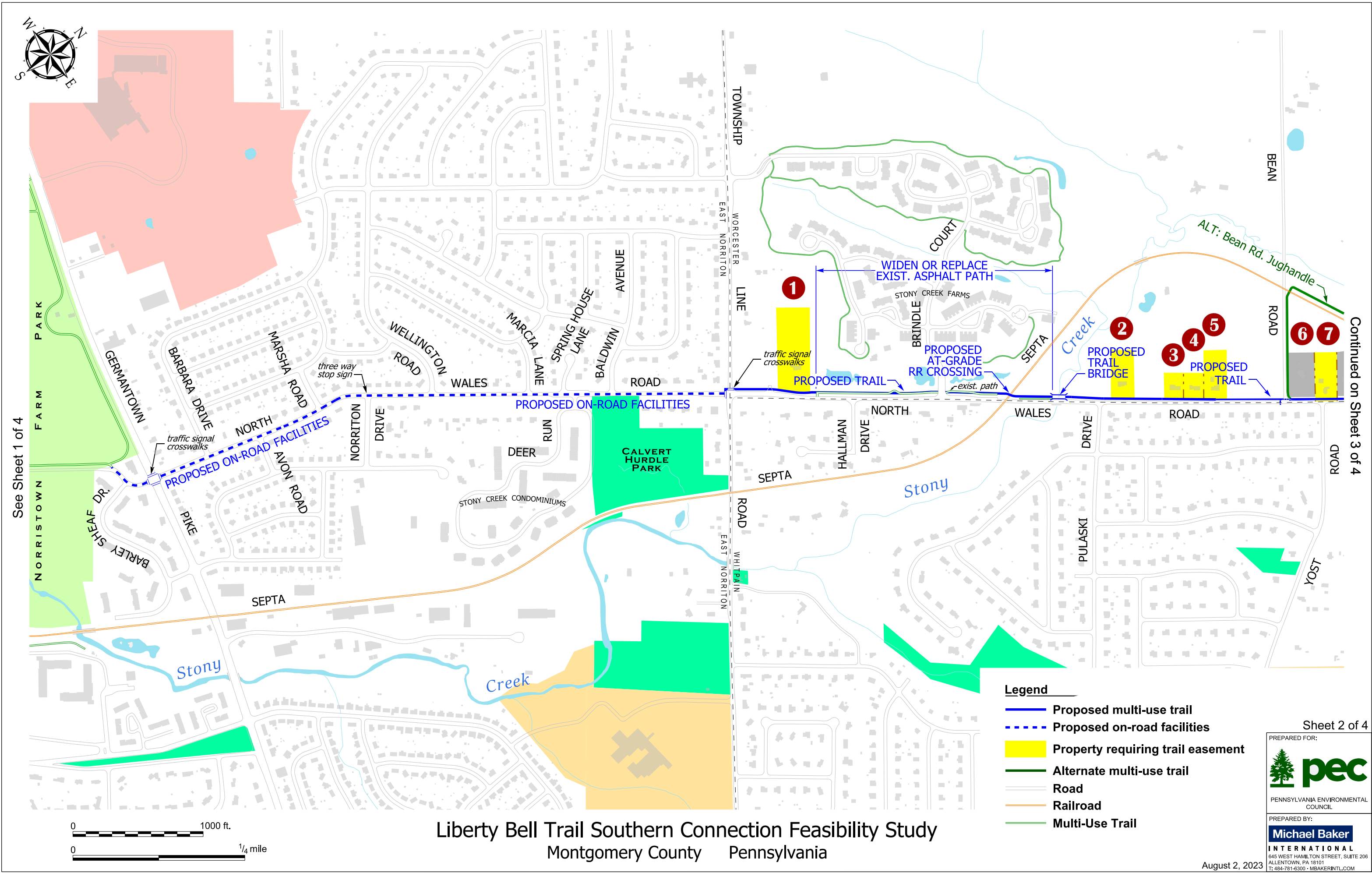


Legend

- Proposed multi-use trail
- Designated on-road connector
- Road
- Railroad
- Multi-Use Trail
- Stony Creek Trail recommended by 2016 study

Liberty Bell Trail Southern Connection Feasibility Study

Montgomery County Pennsylvania



Continued on Sheet 3 of 4

PREPARED FOR:



PREPARED BY:

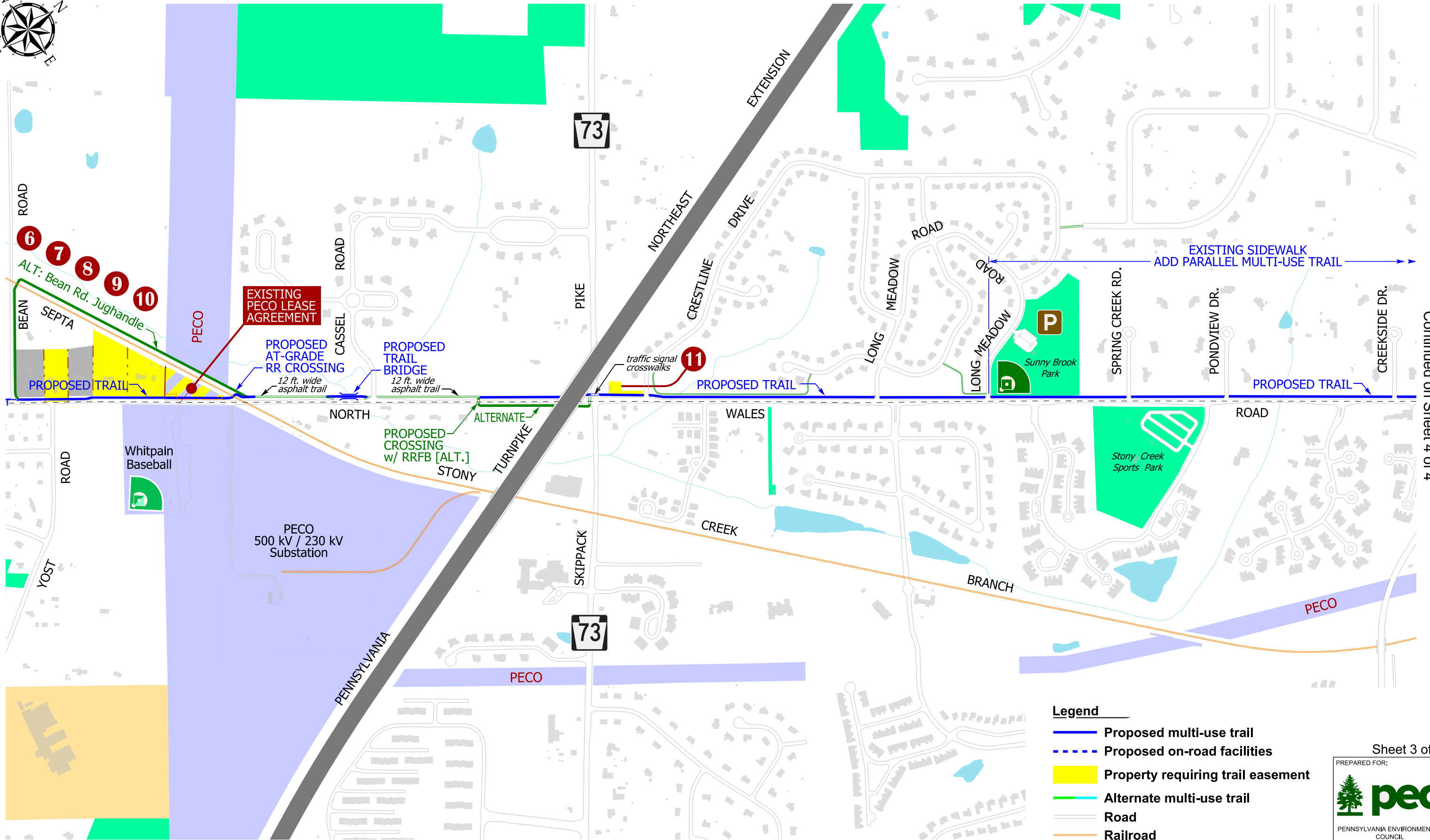
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August 2, 2023



Continued on Sheet 2 of 4

Continued on Sheet 4 of 4



Legend

- Proposed multi-use trail
- Proposed on-road facilities
- Property requiring trail easement
- Alternate multi-use trail
- Road
- Railroad
- Multi-Use Trail

Liberty Bell Trail Southern Connection Feasibility Study

Montgomery County Pennsylvania

Sheet 3 of 4

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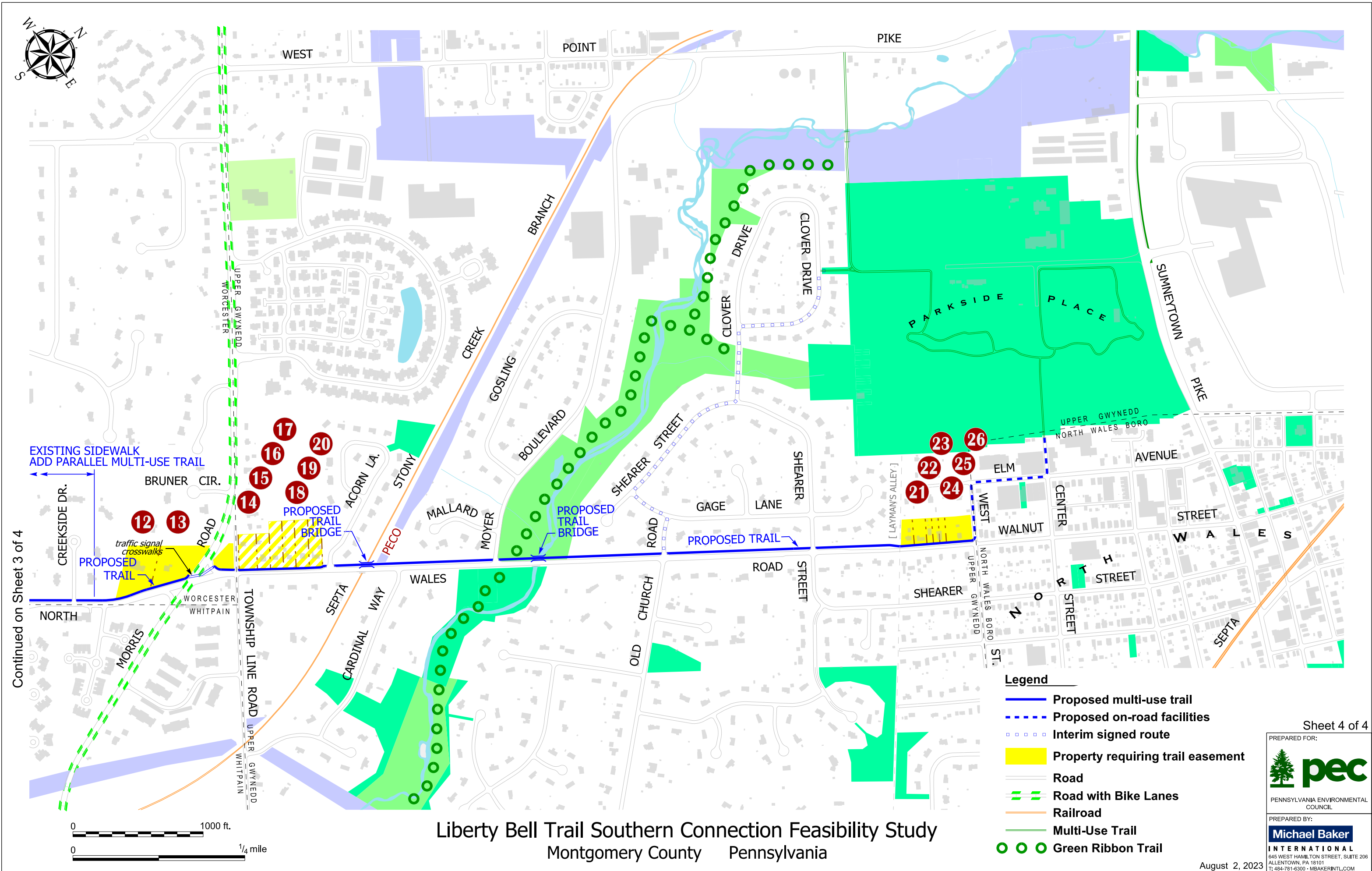
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August 1, 2023



Legend

- Proposed multi-use trail
- - - Proposed on-road facilities
- □ □ Interim signed route
- Property requiring trail easement
- ▬ Road
- -- Road with Bike Lanes
- Railroad
- Multi-Use Trail
- ○ Green Ribbon Trail

Scale: 0 to 1000 ft / 0 to 1/4 mile

Continued on Sheet 3 of 4

Sheet 4 of 4

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Date: August 2, 2023

Liberty Bell Trail Southern Connection Feasibility Study

Montgomery County Pennsylvania

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Continued on Sheet 3 of 4

Sheet 4 of 4

Liberty Bell Trail Southern Connection Feasibility Study
Montgomery County Pennsylvania

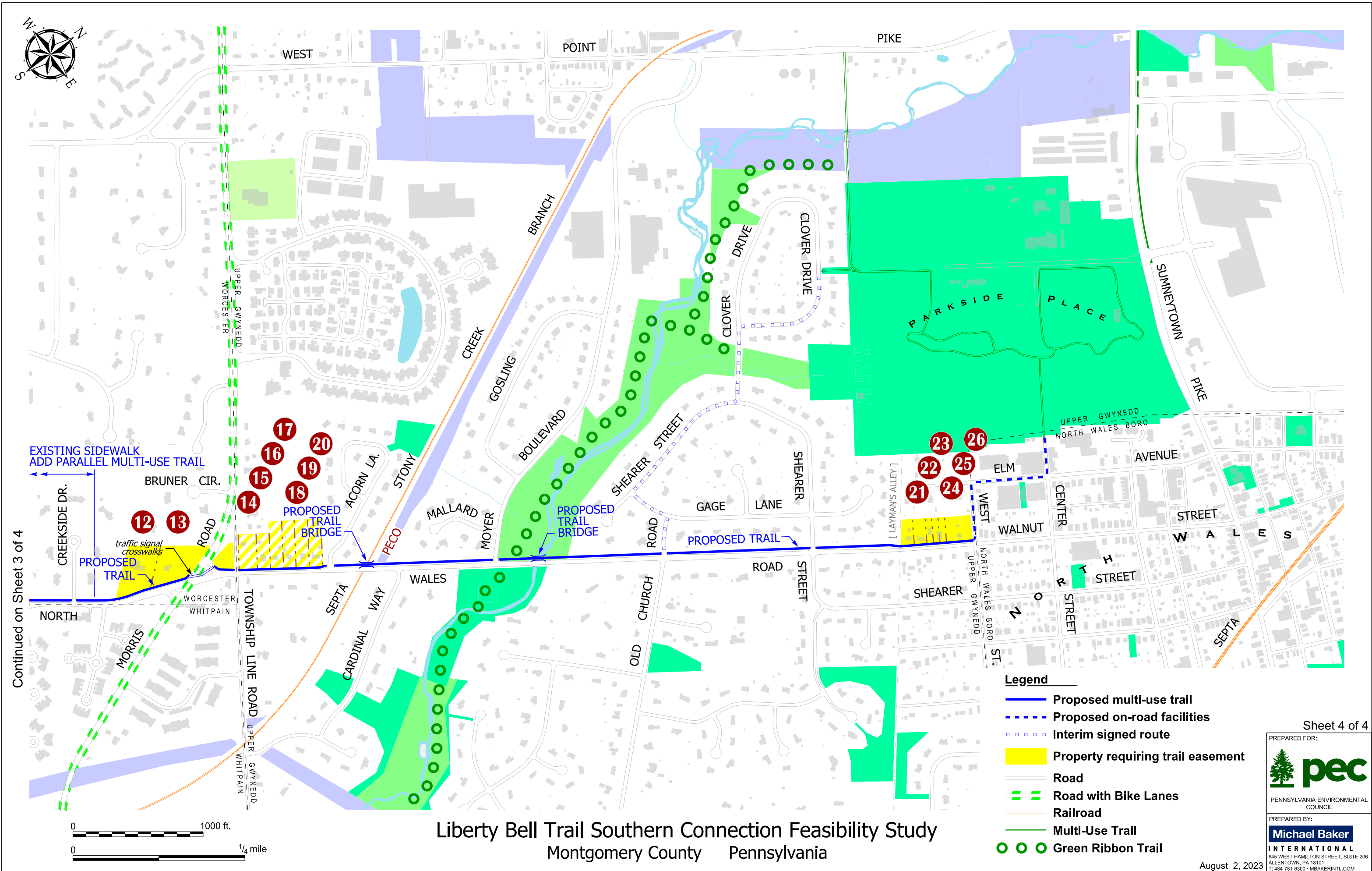
Prepared for:
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August 2, 2023

Legend

- Proposed multi-use trail
- Proposed on-road facilities
- Interim signed route
- Property requiring trail easement
- Road
- Road with Bike Lanes
- Railroad
- Multi-Use Trail
- Green Ribbon Trail

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Continued on Sheet 3 of 4

Legend

- Proposed multi-use trail
- Proposed on-road facilities
- Interim signed route
- Property requiring trail easement
- Road
- Road with Bike Lanes
- Railroad
- Multi-Use Trail
- Green Ribbon Trail

0 1000 ft.

0 1/4 mile

Liberty Bell Trail Southern Connection Feasibility Study
Montgomery County Pennsylvania

Sheet 4 of 4

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August 2, 2023

Continued on Sheet 3 of 4

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Liberty Bell Trail Southern Connection Feasibility Study
Montgomery County Pennsylvania

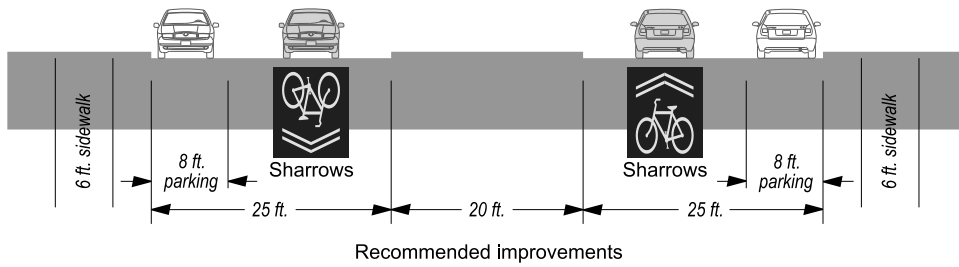
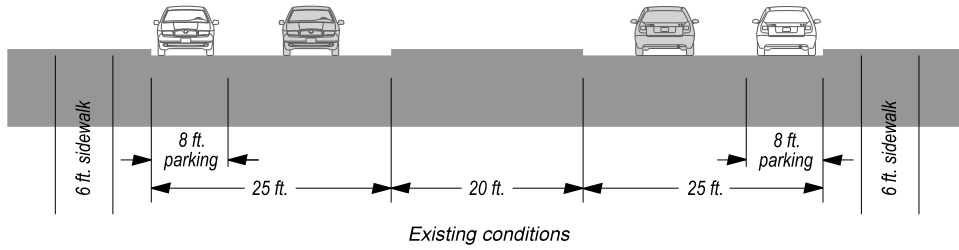
Prepared for:
pec
PENNSYLVANIA ENVIRONMENTAL COUNCIL

Prepared by:
Michael Baker International
645 WEST HAMILTON STREET, SUITE 208
ALLEN TOWN, PA 18101
T: 484-781-6300 • M.BAKERINTL.COM

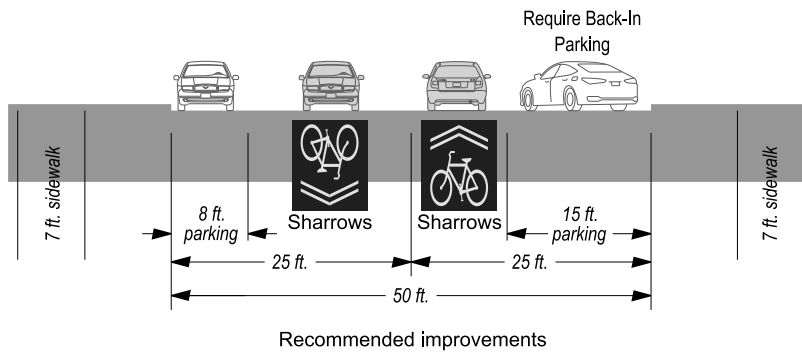
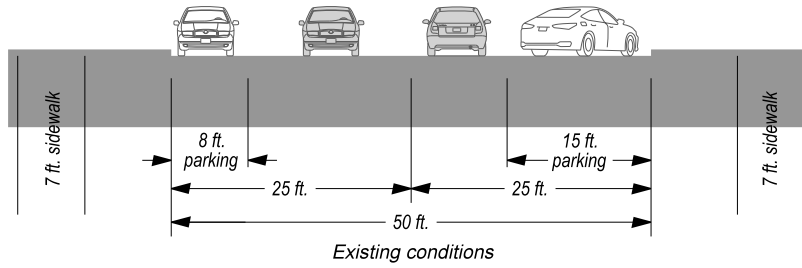
August 2, 2023

Legend

- Proposed multi-use trail
- Proposed on-road facilities
- Interim signed route
- Property requiring trail easement
- Road
- Road with Bike Lanes
- Railroad
- Multi-Use Trail
- Green Ribbon Trail

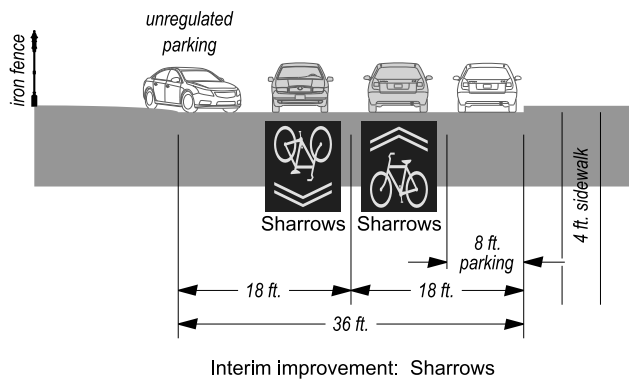
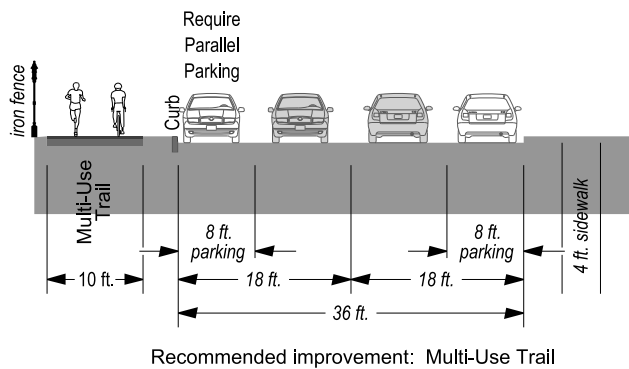
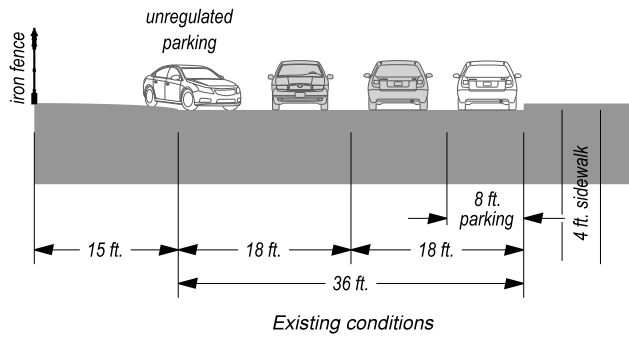


**Section looking north
Haws Avenue
Elm Street to Beech Street
Borough of Norristown**



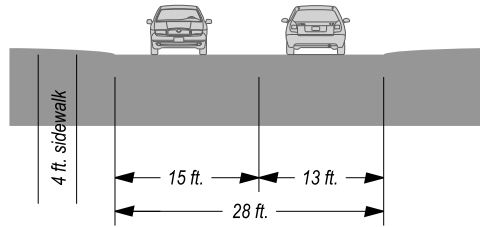
**Section looking north
Haws Avenue
Airy Street to Elm Street
Borough of Norristown**



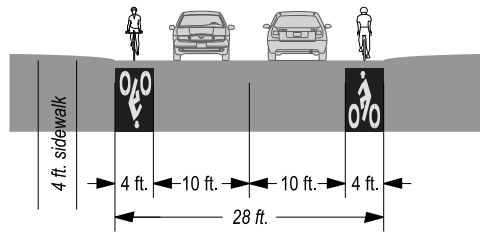


**Section looking north
Stanbridge Street north of Sterigere Street
Borough of Norristown**



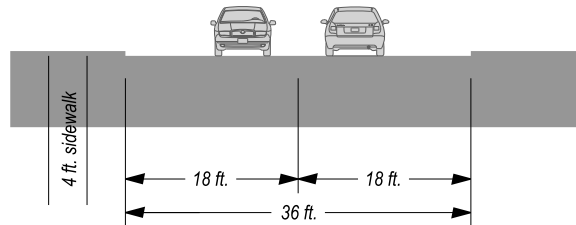


Existing conditions

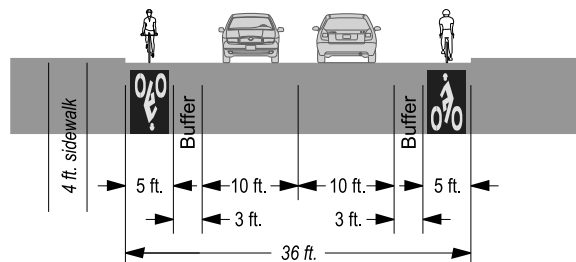


Recommended improvements

**Section looking north
North Wales Road
narrow sections
Germantown Pike to Township Line Road
East Norriton Township**



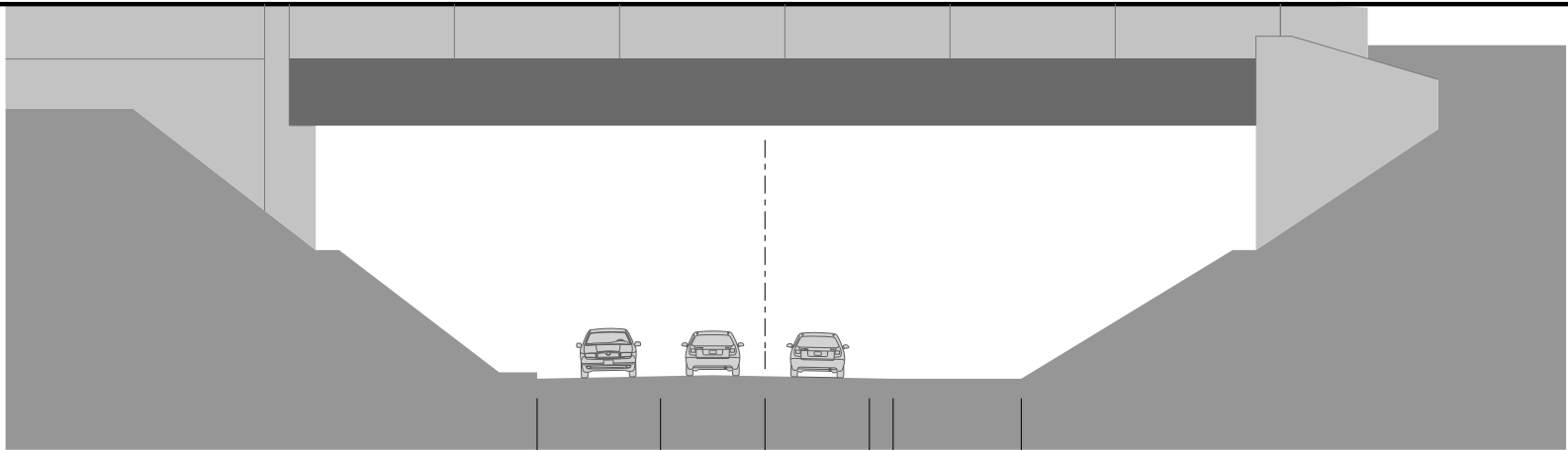
Existing conditions



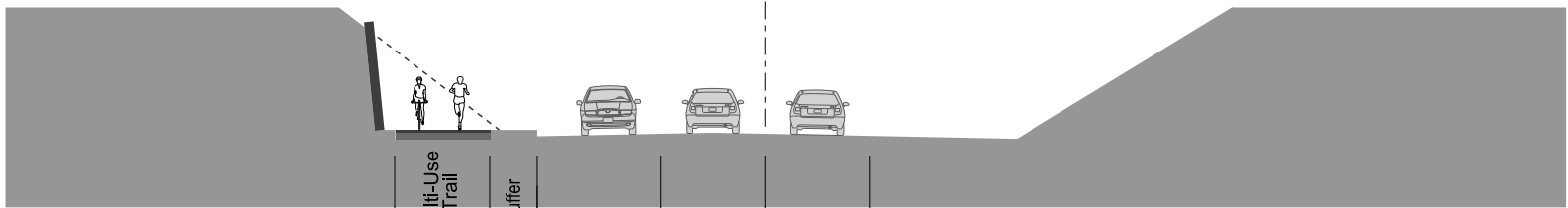
Recommended improvements

**Section looking north
North Wales Road
wide sections
Germantown Pike to Township Line Road
East Norriton Township**

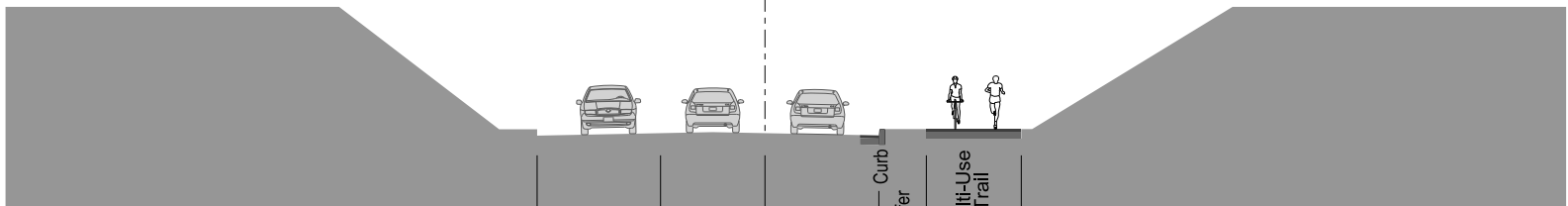




Existing conditions



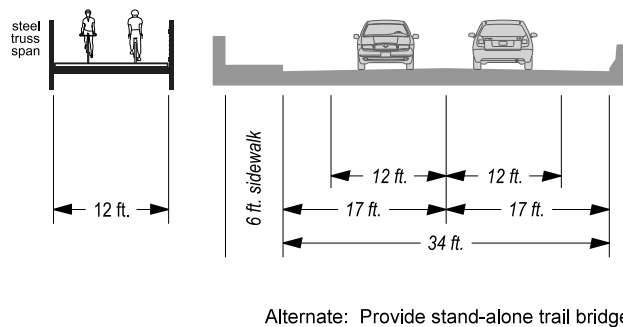
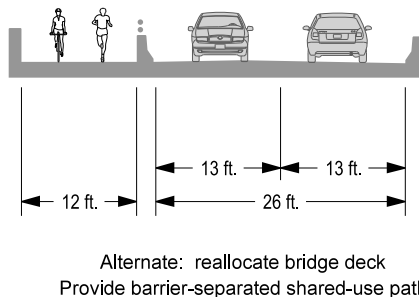
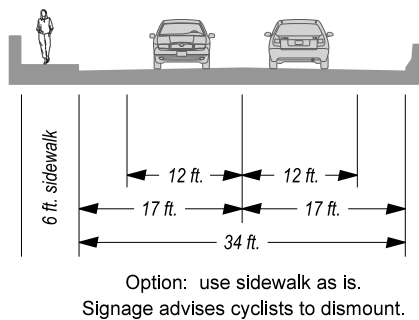
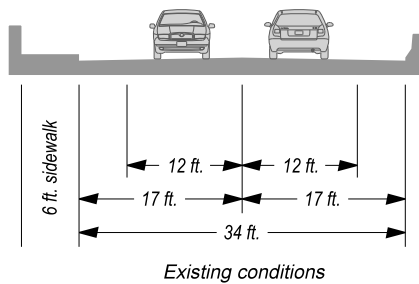
Recommended improvement: Excavate at Turnpike Bridge Abutment to Carve Out Space for Trail on Worcester Township side of road



Alternate improvement: Place trail in Vacant Space on Whitpain Township side of road

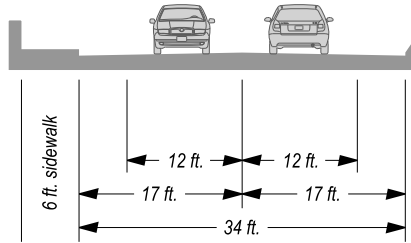
Section looking north
 North Wales Road at Penna Turnpike
 ← Worcester Township | Whitpain Township →



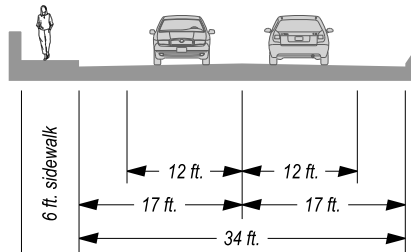


Section looking north
North Wales Road over SEPTA railroad
Upper Gwynedd Township

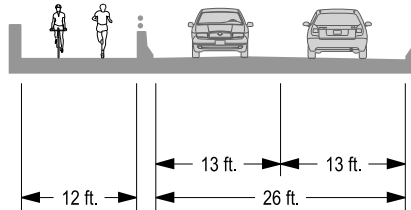




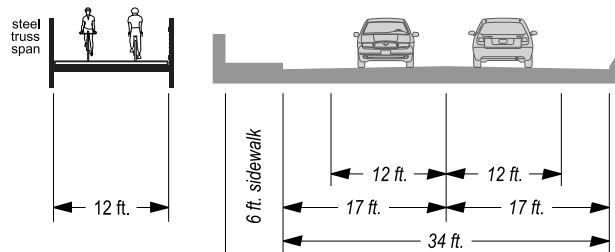
Existing conditions



Option: use sidewalk as is.
Signage advises cyclists to dismount.



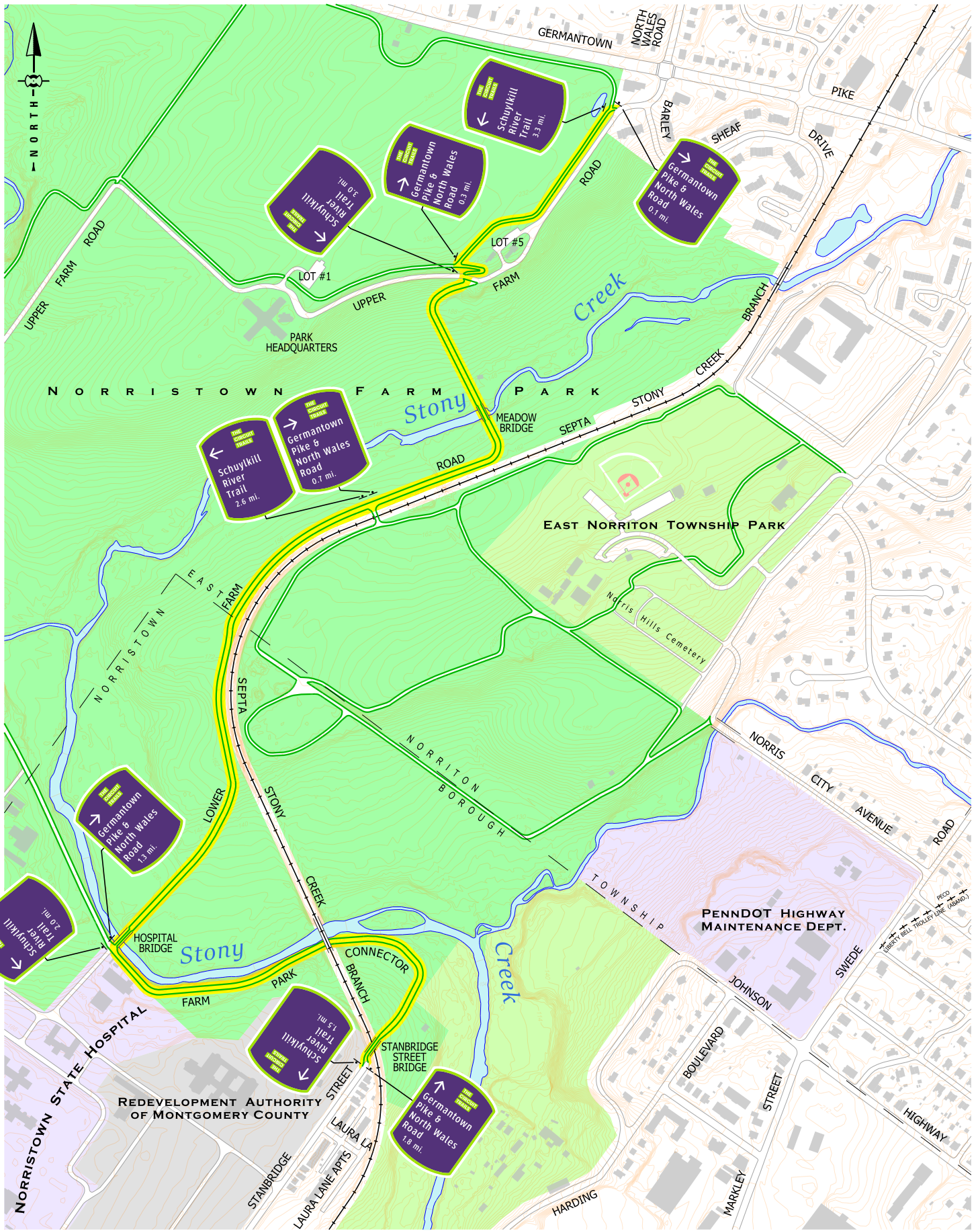
Alternate: reallocate bridge deck
Provide barrier-separated shared-use path



Alternate: Provide stand-alone trail bridge

Section looking north
North Wales Road over Wissahickon Creek
Upper Gwynedd Township





Signage Plan

Parcels which may require negotiation of trail easements

	Half Right-of-Way width (ft.)	Note	Edge of road to Right-of-Way Line (ft.)	Address	Use	Owner occupied	North Wales Road frontage (ft.)	Municipality	Tax Map ID	Parcel
1	varies	1	0	1515 North Wales Road	residence	✓	247	Worcester	67021 025	670002611004
2	20	2	6	1625 North Wales Road	residence		175	Worcester	67021 031	670002623001
3	20		6	1641 North Wales Road	residence	✓	150	Worcester	67021 026	670002620004
4	20		6	1645 North Wales Road	residence	✓	150	Worcester	67021 023	670002626007
5	20		6	1651 North Wales Road	residence	✓	175	Worcester	67021 030	670002629004
6	35	3	20	1703 North Wales Road	residence	✓	186	Worcester	67022 086	670002636006
7	16.5	4	4	1711 North Wales Road	residence	✓	175	Worcester	67022 062	670002635007
8	40	5	28	1715 North Wales Road	residence		175	Worcester	67022 013	670002633009
9	30		10	1719 North Wales Road	residence	✓	261	Worcester	67022 091	670002634008
10	30		10	1723 North Wales Road	residence	✓	258	Worcester	67022 092	670002634107
11	40		12	Crestline Drive & North Wales Road	pump station		248	Worcester	67023C179	670003322013
12			10 to 13	2526 Bruner Circle	residence	✓	282	Worcester	67023 103	670002591033
13			11	2508 Morris Road	residence	✓	335	Worcester	67023 010	670002593004
14			10 to 28	2511 Morris Road	vacant		180	Worcester	67023 012	670002458004
15	30	6	18	121 Old Morris Road	residence	✓	144	Upper Gwynedd	56046 012	560005815006
16	30	6	18	772 North Wales Road	residence	✓	100	Upper Gwynedd	56046 028	560005920009
17	30	6	18	770 North Wales Road	residence	✓	100	Upper Gwynedd	56046 035	560005926003
18	30	6	18	768 North Wales Road	residence	✓	100	Upper Gwynedd	56046 029	560005929009
19	30	6	18	760 North Wales Road	residence		100	Upper Gwynedd	56046 031	560005932006
20	30	6	18	756 North Wales Road	residence	✓	100	Upper Gwynedd	56046 032	560005935003
21	16.5	7	4	516 W Walnut Street	residence	✓	103	Upper Gwynedd	56038 016	560005953003
22	16.5		4	514 W Walnut Street	residence	✓	100	Upper Gwynedd	56038 017	560005956009
23	16.5		4	512 North Wales Road	residence	✓	50	Upper Gwynedd	56038 018	560005959006
24	16.5		4	510 W Walnut Street	residence	✓	50	Upper Gwynedd	56038 036	560005962003
25	16.5		4	508 W Walnut Street	residence		50	Upper Gwynedd	56038 019	560005965009
26	16.5		4	502 W Walnut Street	residence	✓	200	Upper Gwynedd	56038 020	560005968006




- Plans infer that PennDOT took right-of-way to curb line, and no further, when intersection was realigned
- Deed specifies 20 foot half right-of-way and 30 foot half *ultimate* right-of-way
- Deed specifies 35 foot half right-of-way and 40 foot half *ultimate* right-of-way
- Deed specifies 16.5 foot half right-of-way
- Deed specifies 56.5 foot right-of-way (and 40 foot half *ultimate* right-of-way). Interpretation: 40 feet this side plus 16.5 feet other side.
- 1951 subdivision plan label: "FUTURE SIDE LINE OF ROAD." 2010 PennDOT plan label: "LEGAL RIGHT-OF-WAY LINE"
- Deed specifies 20 foot wide alley alongside and 20 foot wide alley behind property [Laymans Alley and Wood Alley respectively]






Map of East Norriton, Pennsylvania, showing wetlands and waterways. The map includes a scale bar (0 to 1.6 km), a north arrow, and a legend. Wetlands are highlighted in green, and waterways in blue. Major roads like I-476 and Skippack Pike are shown. The map is titled "East Norriton" and includes the text "U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov".

■ Estuarine and Marine Deepwater

■ Estuarine and Marine Wetland

 Freshwater Emergent Wetland
 Freshwater Forested/Shrub Wetland
 Freshwater Pond

 Lake
 Other
 Riverine

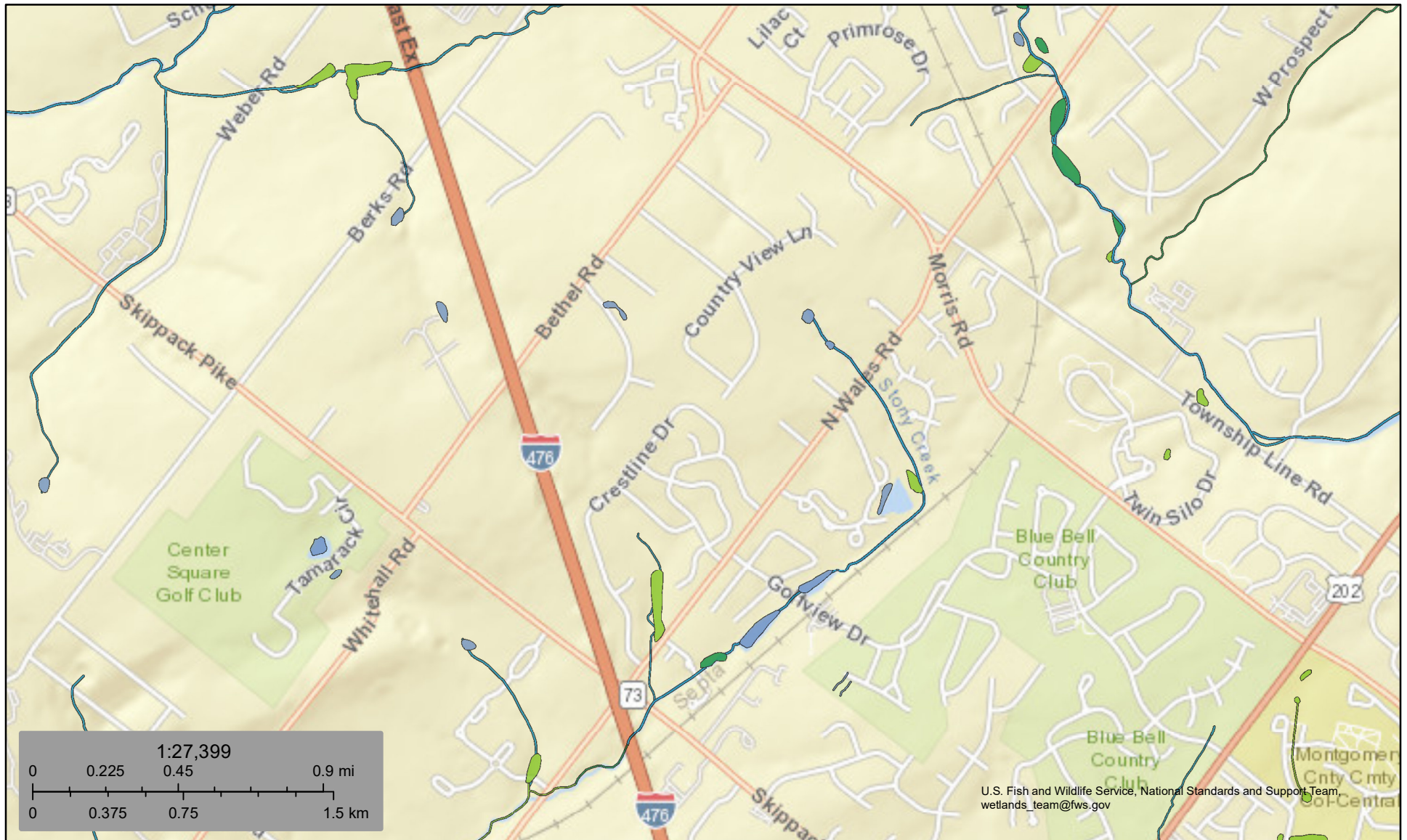
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper



U.S. Fish and Wildlife Service

National Wetlands Inventory

Turnpike to Morris Rd



July 31, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Morris Rd to Parkside Place



July 31, 2023

Wetlands

- Wetlands**
- | | | | | | |
|---|--------------------------------|---|-----------------------------------|--|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Introduction

This Conservation Planning Report compiles names, descriptions, maps, locations, measurements, links and references for Natural Heritage Areas (core and supporting habitats), Important Bird Areas, State Lands, and agency designated water resources that are coincident with an area of interest defined by the user of the Pennsylvania Conservation Explorer tool. For an overview and additional details, please be sure to visit the website at www.naturalheritage.state.pa.us and download the applicable County Natural Heritage Inventory report(s).

Site Area: 61.24 acres

County(s): Montgomery

Township/Municipality(s): EAST NORRITON; NORRISTOWN; NORTH WALES; UPPER GWYNEDD; WHITPAIN; WORCESTER

Quadrangle Name(s): LANSDALE; NORRISTOWN

Watersheds HUC 8: Schuylkill

Watersheds HUC 12: Mingo Creek-Schuylkill River; Stony Creek; Upper Wissahickon Creek

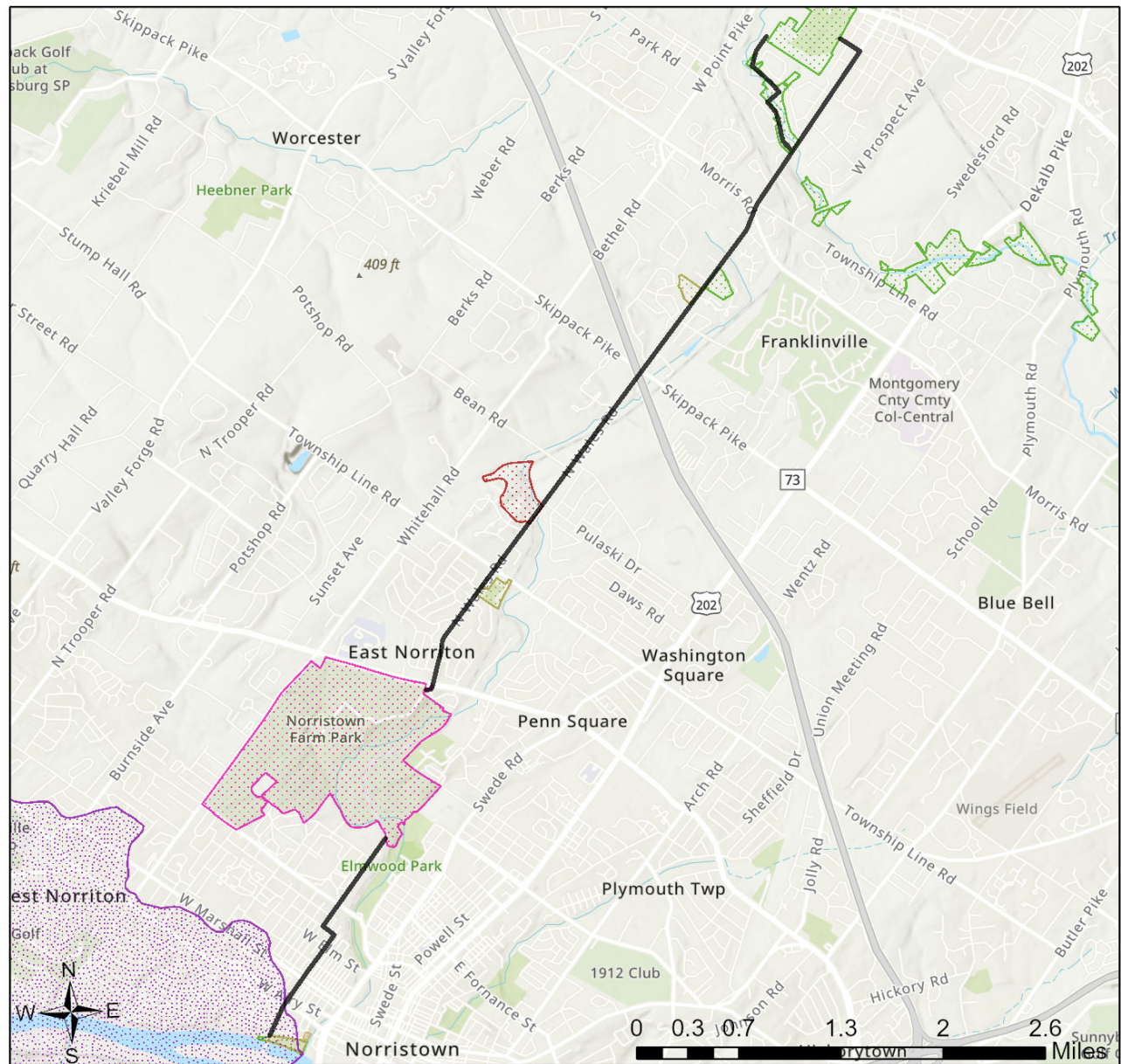
Decimal Degrees: 40.178155 N, -75.308352 W

Degrees Minutes Seconds: 40° 10' 41.3565" N, 75° 18' 30.658" W

SEARCH RESULT SUMMARY

Conservation Planning Category	Detected Area Summary
Natural Heritage Areas	1 site
Protected Lands	7 tracts; 7.19 acres

Liberty Bell Trail South



- Protected Areas
- State Lands
- Local Parks
- Supporting Landscapes
- Core Habitats
- Project_Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Natural Heritage Areas

Natural Heritage Areas (NHAs) are sites that have been identified as critical habitat for species or natural communities of concern. This dataset is designed to identify, map and discuss areas that support species of concern, exemplary natural communities, and broad expanses of intact natural ecosystems that support components of Pennsylvania's native species biodiversity. These areas are prioritized based upon their ecological qualities and provided with recommendations regarding their management and protection. Most of the existing NHAs have been developed through PNHPs County Natural Heritage Inventories -- systematic studies of the critical biological resources of a county.

Natural Heritage Site Name	Description	Reference
Norritonville Woods	Locally significant upland and floodplain woods along Stony Creek. Site surrounded by suburban development.	View the CNHI report for more information

State Lands

These include lands managed by the Department of Natural Resources (DCNR) Bureau of Forestry (BOF) for long-term forest health and native plant conservation; Pennsylvania Game Commission (PGC) for hunting, trapping and fishing; and DCNR Bureau of State Parks (BSP) for healthful outdoor recreation and environmental education.

Name	Wild Area Type	Wild Area Name	Manager	Total Acres
Norristown Farm Park S.P.	None	NA	BSP	703.62

Protected Lands

Protected lands or conservation areas are locations which receive protection, through legal or other means, because of their recognized natural, ecological and/or cultural values.

Name	Description	Owner	Website	Total Acres
Calvert Hurdle Park	Park	Montgomery		14.00
Parkside Place Complex	Park	Montgomery	Link	92.00
Riverfront Park	Park	Montgomery	Link	10.00
Stony Creek Sports Park	Park	Montgomery	Link	13.00
Sunnybrook Park	Park	Montgomery	Link	10.00
Green Ribbon Preserve	Nature Preserve	Wissahickon Trails	Link	0.00

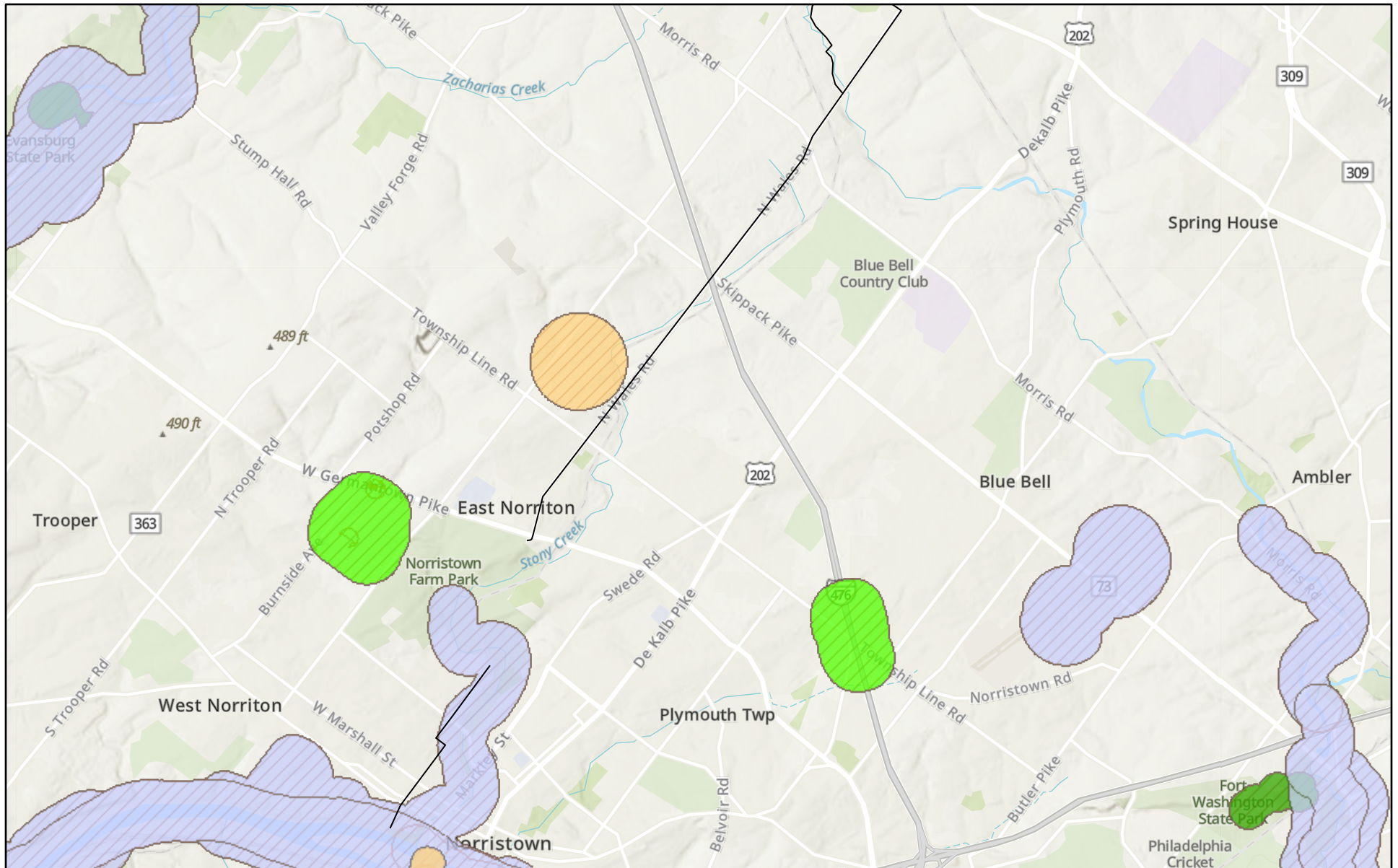
Local Parks

A local park is a publicly owned and publicly accessible park or natural area that engages participants of all ages in outdoor recreational experiences. Local parks and open spaces connect citizens to close-to-home outdoor recreation opportunities for play and physical activities; promote health and wellness, and environmental stewardship.

Local Park	Park Type	County	State or Federal Grant Funding
Riverfront Park	Neighborhood Parks	Montgomery	Yes, click here for more information.
Calvert Hurdle Park	Community Parks	Montgomery	No
Sunny Brook Park	Community Parks	Montgomery	No

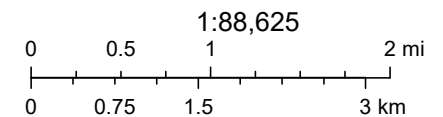
For additional information about the Pennsylvania Natural Heritage Program, visit the website at www.naturalheritage.state.pa.us or you can email your questions and comments to RA-HeritageReview@pa.gov.

Liberty Bell Trail South - T&E Species



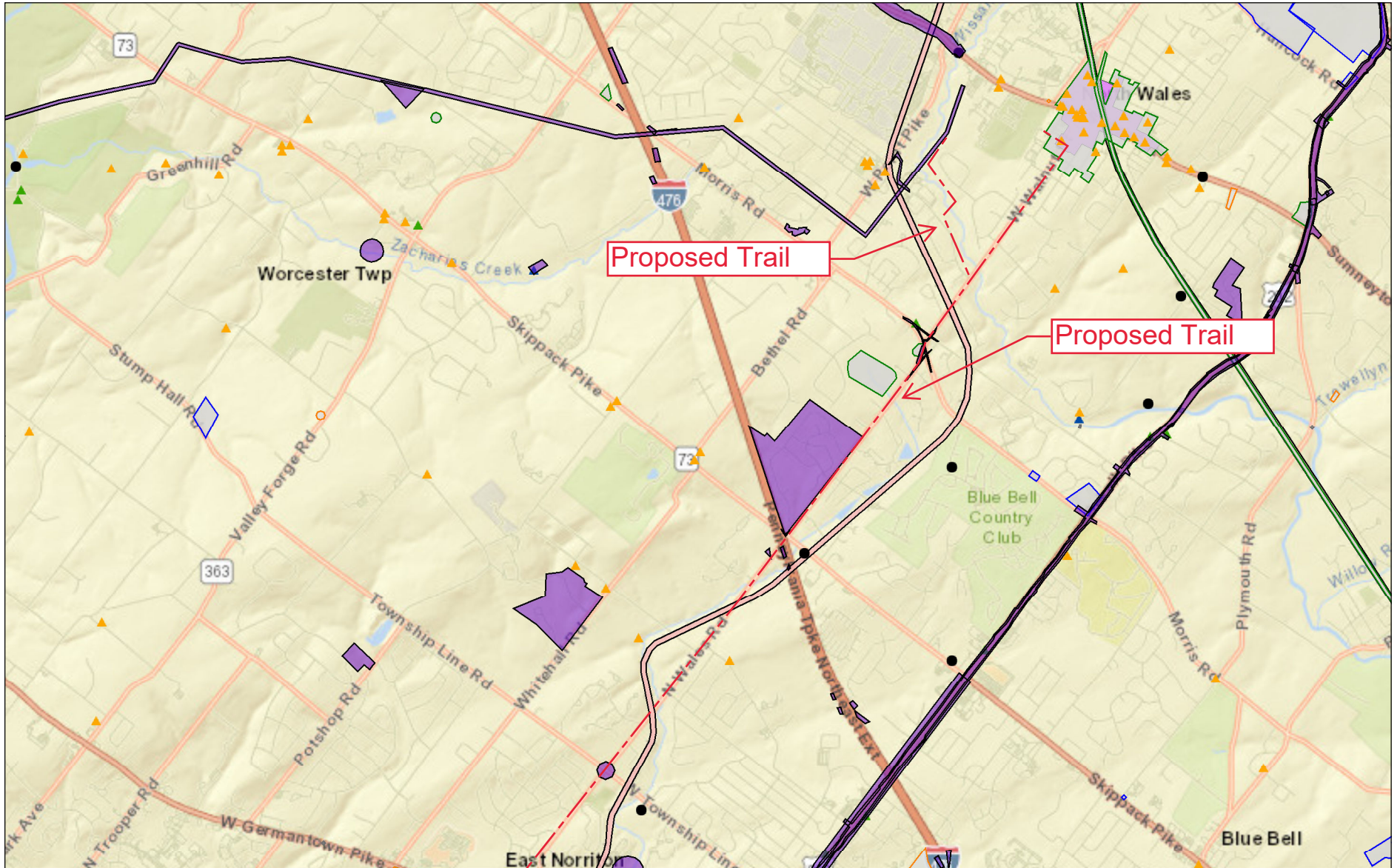
June 26, 2023

- | | |
|--|--|
| Combined State Agency Species | PFBC Species of Special Concern |
| DCNR Species of Special Concern | PFBC Threatened and Endangered Species |
| DCNR Threatened and Endangered Species | PGC Species of Special Concern |

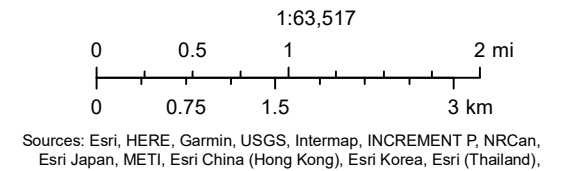


Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA,

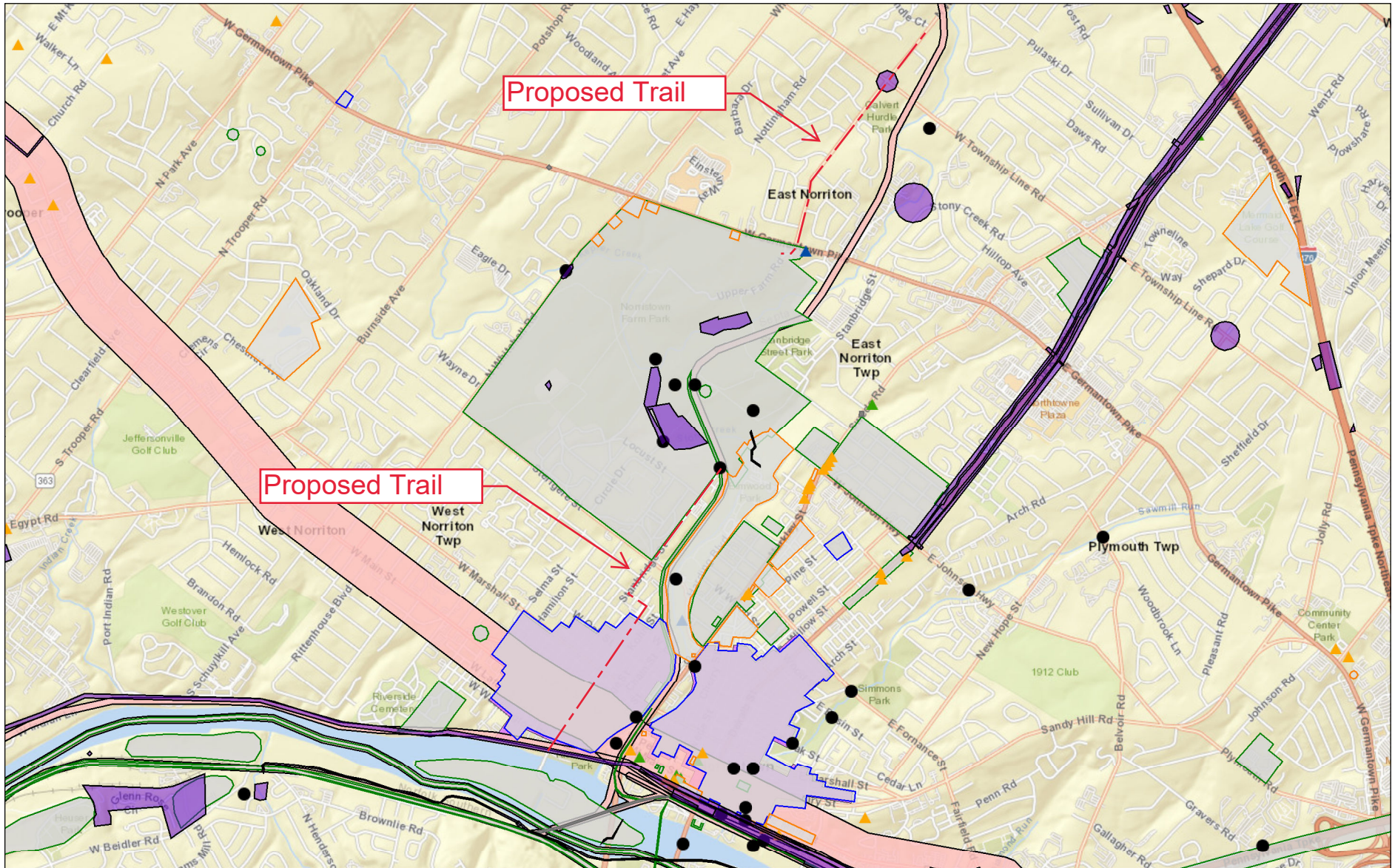
Liberty Bell Trail South (1)



June 27, 2023



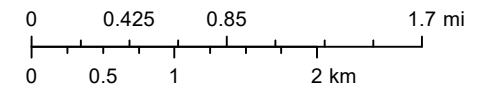
Liberty Bell Trail South (2)



June 27, 2023



1:53,007



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand),

Meeting Minutes

Project: Liberty Bell Trail - South

Date: May 17, 2023

Subject: Municipal Kick-Off Meeting

Time: 10:00am

Norristown and East Norriton:

- Brief Introductions (Michael Baker)

Attendees:

Erica Genuardi – Norristown (egenuardi@norristown.org)

Natalie Colson – East Norriton (ncolson@eastnorritontwp.org)

Jessica Bendl – East Norriton (jbendl@eastnorritontwp.org)

Patrick Starr – PEC (pstarr@pecpa.org)

Zhenya Nalywayko – PEC (znalywayko@pecpa.org)

Chris Stanford – Michael Baker Intl. (Cstanford@mbakerintl.com)

Mike Szilagyi - Zoltan.Szilagyi@mbakerintl.com

Steve DiSciullo – Michael Baker Intl. (steven.disciullo@mbakerintl.com)

- Project Background (PEC)

Patrick and Zhenya explained the origins of the Liberty Bell Trail south alignment from Norristown to Upper Gwynedd Township. PEC explained the alignment to be studied, along with alternative alignments identified in the Stony Creek/Saw Mill Run Greenway study from 2016.

- Municipality's initial thoughts (Norristown and East Norriton)

The section of the alignment from existing Schuylkill River Trail to Norristown Farm Park has already been identified, and signage is present along the corridor. Michael Baker explained that this alignment will be documented in our study and enhancements will be considered including additional signage, "share the road" pavement marking, and traffic calming measures including bump-outs and 'road diets'.

East Norriton is working on an alternative alignment along Arch Street. Information on this alignment will be documented in the final Technical Memo.

Meeting Minutes

Project: Liberty Bell Trail - South

Date: May 17, 2023

Subject: Municipal Kick-Off Meeting

Time: 10:00am

- **Study Area Map Overview (Michael Baker)**

Michael Baker presented a base map (Attached) and discussed the proposed study area with the group. Within Norristown and East Norriton, the study area begins on Haws Ave and extends from the existing Schuylkill River Trail to W Beech Street. The study area follows W Beech Street to Stanbridge, and follows Stanbridge to Norristown Farm Park.

Within Norristown Farm Park there is a network of existing trails that will be verified to determine if they meet the Circuit Standard width of 10'.

- **Scope and Milestone Schedule (Michael Baker)**

Michael Baker walked through the scope of work and milestone schedule copied below:

Liberty Bell Trail - Southern Connection Study
Norristown to Upper Gwynedd Twp

	Planned Submission	Actual Submission	Resubmission Date (As needed)	Approval Date	Comments
Field View / Photos / Green Ribbon	5/3/2023				Steve / Mike
Base Map and Existing Conditions	5/8/2023				Mike / Edwin / Lisa
Municipality Meetings (2-5?)	5/8/23 to 5/19/23				
Environmental Assessment	5/19/2023				Ken / Dee / ?
ROW / Property Owner Research	5/26/2023				Steve can request plans from PennDOT. Trail Ownership from Municipalities. Organize in Table for Memo
Status Meeting # 1 (PEC)	5/30/2023				
Trail Concept Plan	6/16/2023				Mike S / Edwin / Lisa / Steve / Chris
SEPTA Railroad and PA Turnpike Crossing Plans	6/23/2023				Take Pics at Field View. Mike to investigate design
Status Meeting # 2	6/30/2023				
Technical Memo / Implementation Recommendations	7/28/2023				
Status Meeting # 3 (PEC)	7/31/2023				

- **Action Items**

Subdivision plan Request – Please email to steven.disciullo@mbakerintl.com

- **Norristown:**

- Plans of the Arch Street Greenway Corridor

- **East Norriton Twp:**

Meeting Minutes

Project: Liberty Bell Trail - South

Date: May 17, 2023

Subject: Municipal Kick-Off Meeting

Time: 10:00am

- Any subdivision plans, land development plans or record plans for subdivisions that front on North Wales Road between Germantown Pike and Township Line Rd (boundary w East Norriton Twp.)
- Plans of Heroes Park / Calvert Hurdle Park
- Plans of Barrington Park
- Plans of Stanbridge Street Park

Liberty Bell Trail Southern Connection

Meeting of 17 May 2023

Attendees:

Sandra Zadell, Upper Gwynedd Township

Sara Prebis, Upper Gwynedd Township

Malcolm Smith, Whitpain Township

Michael Richino, Whitpain Township

Amanda Lafty, Worcester Township

Zhenya Nalywayko, PEC

Patrick Starr, PEC

Chris Stanford, MBI

Steve Disciullo, MBI

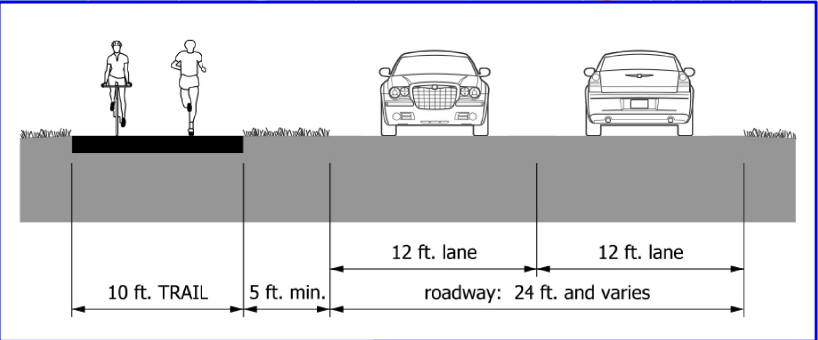
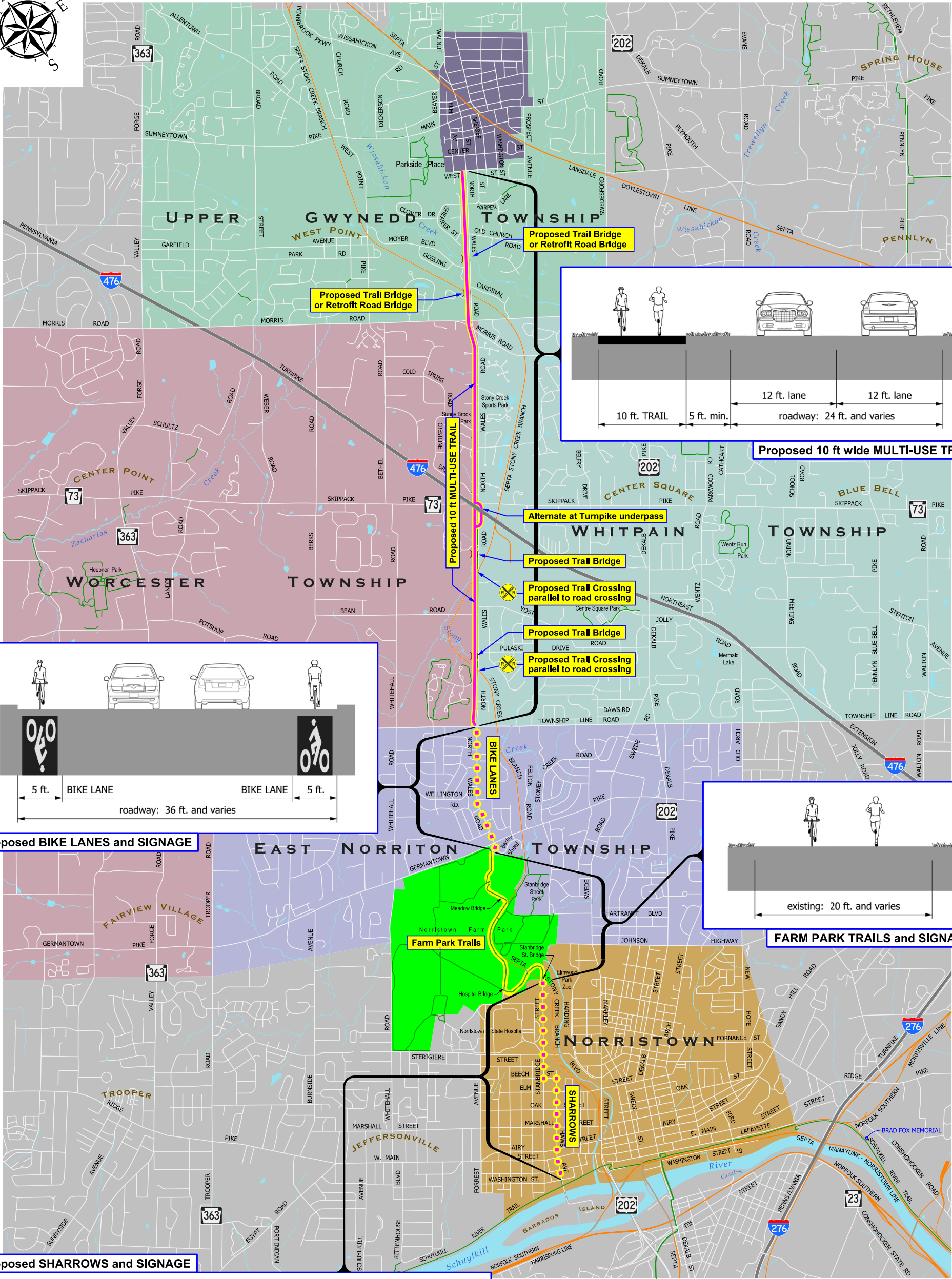
Mike Szilagyi, MBI

The goals and timeframe of the study were shared with meeting attendees. A map of the study corridor was shared.

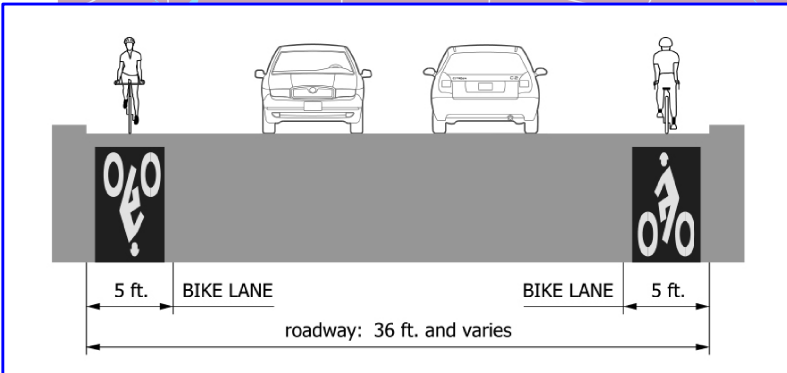
Township officials lent general support to the idea of Liberty Bell Trail within the proposed alignment. Upper Gwynedd Township manager Zadell cautioned that there has been opposition to the Liberty Bell Trail by residents in the area of Gosling Drive and Moyers Boulevard. This opposition was focused on the concept of placing a multi-use trail on the PECO-owned, former trolley right-of-way that is located between those residence's back yards and the SEPTA Stony Creek Branch railroad. It was made clear that this study is not proposing a trail in that corridor.

Township officials agreed to locate subdivision plans within the study corridor, and to send scans of those plans to the team.

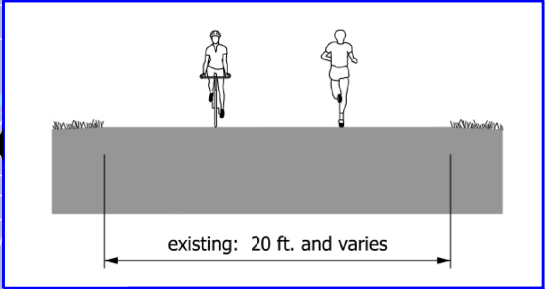
It was agreed that meeting attendees would be kept informed as the study progresses.



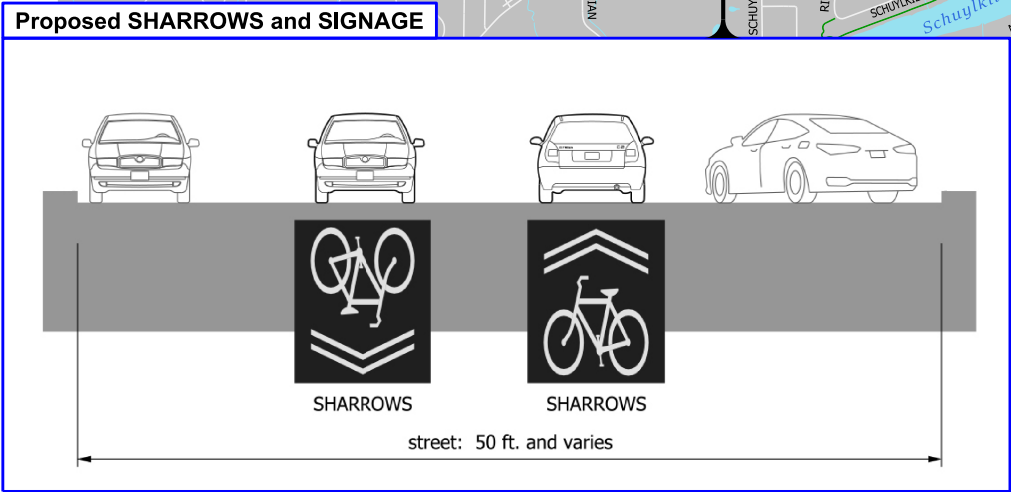
Proposed 10 ft wide MULTI-USE TRAIL



Proposed BIKE LANES and SIGNAGE



FARM PARK TRAILS and SIGNAGE

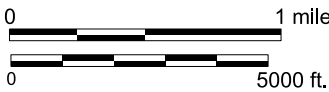


Proposed SHARROWS and SIGNAGE

Summary of Recommendations

- Proposed 10 ft wide MULTI-USE TRAIL
- Proposed PAVEMENT MARKINGS and SIGNAGE
- Farm Park Trails


- Existing Multi-Use Trail
- Road
- Railroad



Liberty Bell Trail Southern Connection Feasibility Study
Montgomery County Pennsylvania

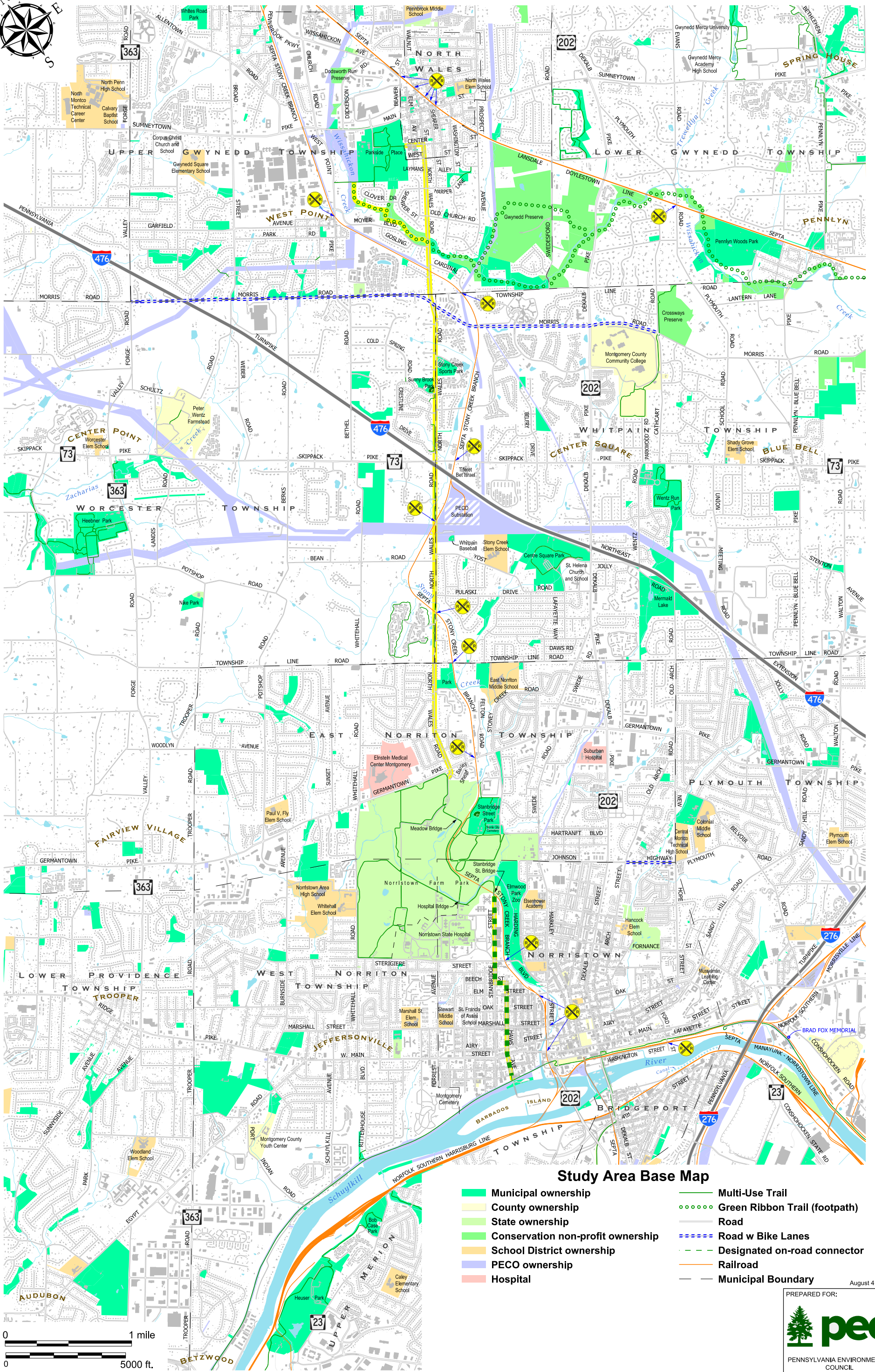
August 22, 2023

PREPARED FOR:


PENNSYLVANIA ENVIRONMENTAL COUNCIL

PREPARED BY:

Michael Baker
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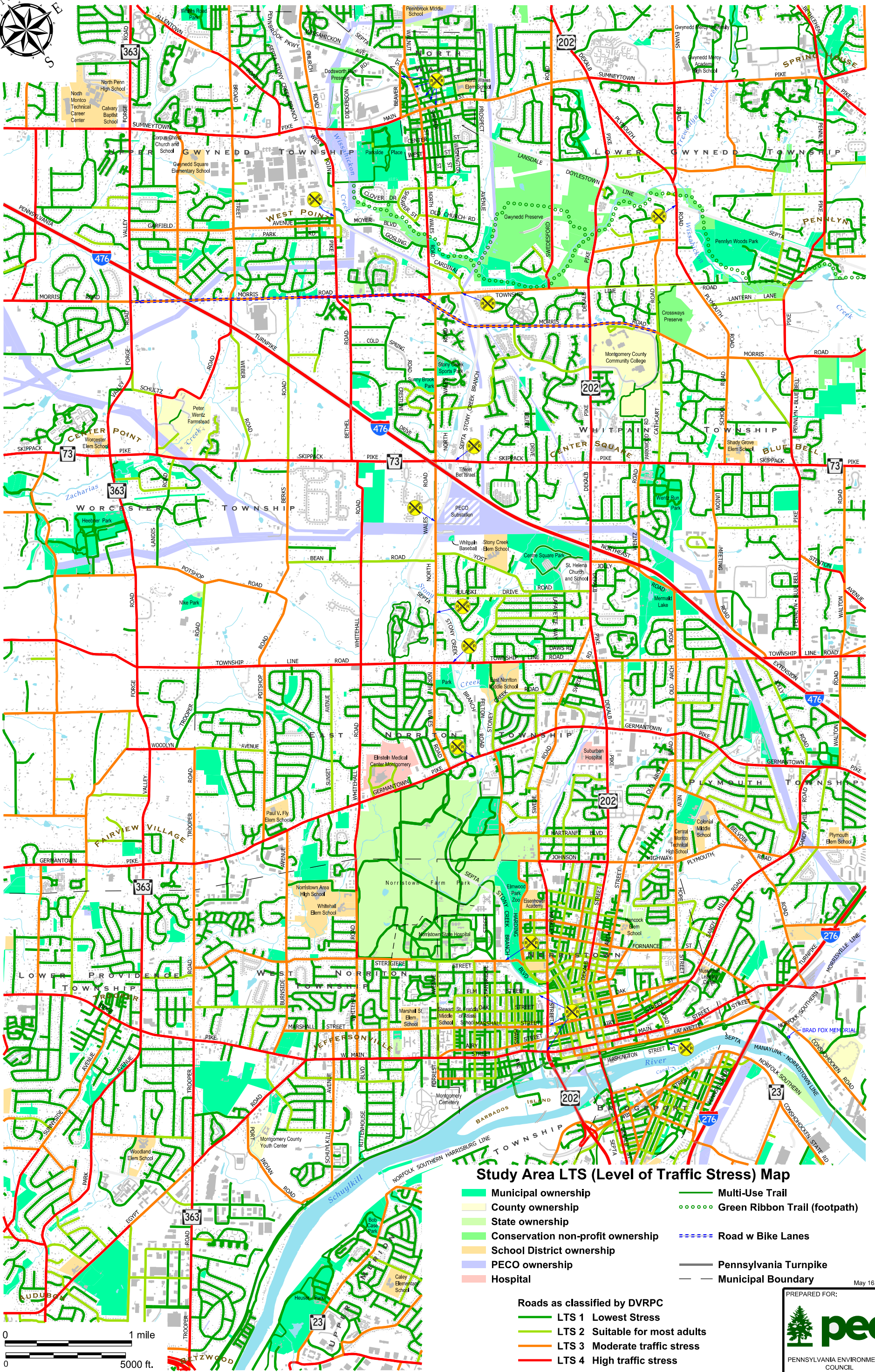
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Study Area LTS (Level of Traffic Stress) Map

- Municipal ownership
- County ownership
- State ownership
- Conservation non-profit ownership
- School District ownership
- PECO ownership
- Hospital
- Multi-Use Trail
- Green Ribbon Trail (footpath)
- Road w Bike Lanes
- Pennsylvania Turnpike
- Municipal Boundary

- Roads as classified by DVRPC**
- LTS 1 Lowest Stress
 - LTS 2 Suitable for most adults
 - LTS 3 Moderate traffic stress
 - LTS 4 High traffic stress

May 16, 2023

PREPARED FOR:

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