



Brynford Safe Streets Study

September 14th, 2023
Haverford Township



Acknowledgements

BRYNFORD SAFE STREETS STUDY

August 2023

This report, with funding from the Delaware Valley Regional Planning Commission (DVRPC) Transportation and Community Development Initiative (TCDI), provides analysis of the bicycle and pedestrian safety conditions in the Brynford neighborhood and infrastructure and programmatic recommendations to improve safety in the neighborhood. This study is one contribution to the Qualified Safety Action Plan, which will guide bicycle and pedestrian safety improvements throughout the Township.

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Haverford Township



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Introduction

A well connected, safe, and accessible transportation system is essential for building great places to live, work, and thrive. Haverford Township is committed to making safe streets for all users; building and maintaining places where zero deaths or serious injuries occur on Township roadways. In alignment with these principles, Haverford Township has conducted this Safe Streets Study to understand the state of community safety in the Brynford neighborhood and to conceptualize improvements that will improve safety and connectivity for all road users.

The ability to walk, bike, and ride public transportation provides benefits at both the individual and community scale. Walkable communities have shown to be healthier with lower rates of diabetes, cardiovascular diseases, and childhood asthma (Baobeid et al., 2021). Commercial corridors that are conducive to walking can increase the number of people entering shops by up to 40% compared to those only navigable by car, an economic benefit realized through the more gradual pace of a pedestrian (Tolley, n.d.). Walking, biking, and rolling¹ are the most climate friendly modes of transportation. Supporting the ability to use those modes indicates progress on the sustainability initiatives being implemented across the country. The multitude of environmental, social, and economic benefits to creating a walkable community are drivers to this work in Haverford Township.

This study is the first of several across the Township and will ultimately inform the Haverford Township Qualified Safety Action Plan. This

document will guide the implementation of infrastructure and programmatic improvements to improve safety of walking and biking in the Township. This framework and the resulting recommendations were developed through data analysis and a series of public engagement efforts throughout the first half of 2023. This study recognizes that barriers of transportation do not affect all people equally: transit dependency, age, income, disability, and histories of segregation all impact the need for and access to walkable spaces. By understanding that context and the history of the neighborhood, this study also factors in the ways that these improvements can be implemented equitably over time and space.

This Safe Streets Study provides a set of recommendations for bicycle and pedestrian safety improvements in the Brynford neighborhood based on a comprehensive study of the safety data, a walking charette, cost analysis, and public engagement. In the pages that follow, you will find:

- ❖ Description of the Brynford neighborhood, its history, community assets, and demographics.
- ❖ Summary of the current Bicycle and Pedestrian Infrastructure in the Study Area.
- ❖ Summary of the Public Engagement Efforts and feedback received.
- ❖ Resulting Decision-Making Matrix for the Recommendations
- ❖ Recommendations for Improvements

¹ In this project, rolling refers to movement using a mobility device such as a wheelchair, stroller, scooters, or roller blades.

Developing an Action Plan

This study serves as the foundation for the development of a Qualified Safety Action Plan for the Brynford neighborhood and Haverford Township at large. The Qualified Safety Action Plan will in turn serve as a guide for investments, policies, and programs to improve the safety of walking, cycling, and rolling in Haverford Township.

The development of this plan is data informed using both qualitative and quantitative data and analysis to create a full picture of the needs of the community. The plan's analysis and ultimate recommendations aim to achieve the goal of eliminating roadway fatalities and serious injuries in Haverford Township while ensuring transportation equity for the people who live, work, play, worship, and travel through the neighborhood.

This plan was developed through the formation of an advisory committee representing Brynford residents, the Haverford Township Police Department, community organizations, and the Township itself. The project team analyzed current policies through a Policy and Program review, assessed infrastructure through a walking charette, and engaged the community through a public survey and two public meetings. The public meetings allowed for identification of the actual and perceived risks in the neighborhood as well as the routes that are high priority for community members.

In alignment with the federal Safe Streets for All Program, this study includes the following:

- ❖ Analysis of existing conditions and historical trends of crashes

- ❖ Analysis of crash locations
- ❖ Analysis of systemic and specific safety needs including high risk road features
- ❖ Engagement with community stakeholders
- ❖ Incorporation of input from engagement into the plan
- ❖ Consideration of equity using inclusive and representative processes
- ❖ Identification of underserved communities through data
- ❖ Assessment of current policies, plans, guidelines, and standards
- ❖ Comprehensive set of projects and strategies to address safety problems



Figure 1: The Heritage House on Friends School of Haverford campus, one of many destinations within the Brynford neighborhood.

Brynfld: The Study Area



Figure 2: Outlined in red, the Brynfld neighborhood sits at the northeast corner of Haverford Township

Brynfld is an older suburban neighborhood in the northeast corner of Haverford Township on the border with Lower Merion Township and in close proximity to Radnor Township. The boundaries of the Brynfld neighborhood are Haverford Road, College Avenue, County Line Road, San Marino Avenue, and Panmure Road (see Figure 2 above).

This unique neighborhood contains a balance of residential, commercial, religious, recreational, and educational places. There are many historic structures in Brynfld, including one of two Haverford Friends Meetings; portions of two private schools (The Haverford School and Friends School Haverford), Haverford College; and multiple long-term rehabilitation, skilled nursing and assisted living

facilities. Brynford includes a portion of the commercial district along Route 30 (Lancaster Avenue). In addition, the neighborhood is home to Polo Field and Preston Park, two popular recreational facilities in the Township of Haverford. Per participant feedback, the community assets within Brynford are also used by residents of neighboring townships.

Neighborhood Demographics

The Brynford neighborhood is made up of approximately 730 households with a population of nearly 2,000 people (U.S. Census). 14% of Brynford's population is under the age of 18 and 18.3% are over the age of 65. These are two age groups that may have limited abilities to drive or reduced access to personal vehicles. Not only are these groups present as residents, the schools and extended care centers in the area serve these groups as well. Brynford is home to the Haverford Friends School and Haverford School, grade school institutions that serve students from within Brynford and surrounding communities. Bryn Mawr Village and Bryn Mawr Extended Care Center are nursing and rehabilitation facilities in the neighborhood. Daily transportation access is a determining factor to the economic, social, and health-related opportunities available to people. By using an equity-lens, this study acknowledges that everyone deserves safe and affordable access to jobs, housing, schools, and the other destinations people use in their day to day lives. Transportation needs and modal options vary based on age, childcare and eldercare responsibilities, schedules, physical and mental ability, and more. Recognizing the variety of needs and creating a transportation system that is host to multiple viable and affordable options is essential for meeting those needs.

Lack of investment in transportation systems across the United States has historically burdened and underserved certain communities.

As an older neighborhood, the streets in Brynford are narrow and often meet at odd angles. The narrow constraints of the streets make for constant negotiations of space between homeowners, utilities, the beautiful tree canopy, and public infrastructure. The limitations of space were a major consideration during this study.

Addressing those burdens requires intentionally identifying and understanding the needs of overburdened and underserved populations. According to the American Community Survey (2011-2015), Block Group 4083-03 (the majority of the study area) is within the highest quartile of all areas within the Township in terms of the degree of concentration of persons of low and moderate income. Within Brynford, approximately 3.3% of residents are living below the poverty line, but surrounding neighborhoods have much higher rates of poverty, especially to the north (U.S. Census). It is not just the residents who use Brynford's sidewalks and roadways; the neighborhood is also an employment hub with commuters from the surrounding area traveling to work on a daily basis. There are approximately 2,629 employees who work at businesses throughout the census tract. The map from the U.S. Census "OnTheMap" tool (Figure 3) on the following page shows a work area profile for Census tract 4083, of which Brynford makes up approximately $\frac{1}{4}$ of the land area. The map shows that Brynford is a major employment hub with job centers concentrated in the neighborhood. People from surrounding neighborhoods are commuting into this area with a high quantity of jobs. 34.3% of the jobs in this census tract pay \$1,250 a month or less (OnTheMap, U.S. Census).

The economic disparity between Brynford and surrounding areas and the high proportion of low paying work suggests that many of the workers who are commuting into these areas are low income. Transportation costs are the second largest household expenditure after housing, with Americans spending an average of \$10,961 on transportation in 2021. Households in the lowest income quintile spend on average 26.9% of their income on transportation, facing the largest cost burden compared to other income groups.

Workers who use public transit for their commute will always be pedestrians at some point in their journey. Developing bicycle and pedestrian infrastructure that serves the needs of low-income workers who commute to Brynford is essential for an equitable set of recommendations. These workers are a key driver of the local economy and are positioned to benefit the most from safer walking and biking infrastructure. Safer and more convenient transportation options make for increased economic opportunity for both local businesses and their employees.

Counts and Density of All Jobs in Work Selection Area in 2020

All Workers

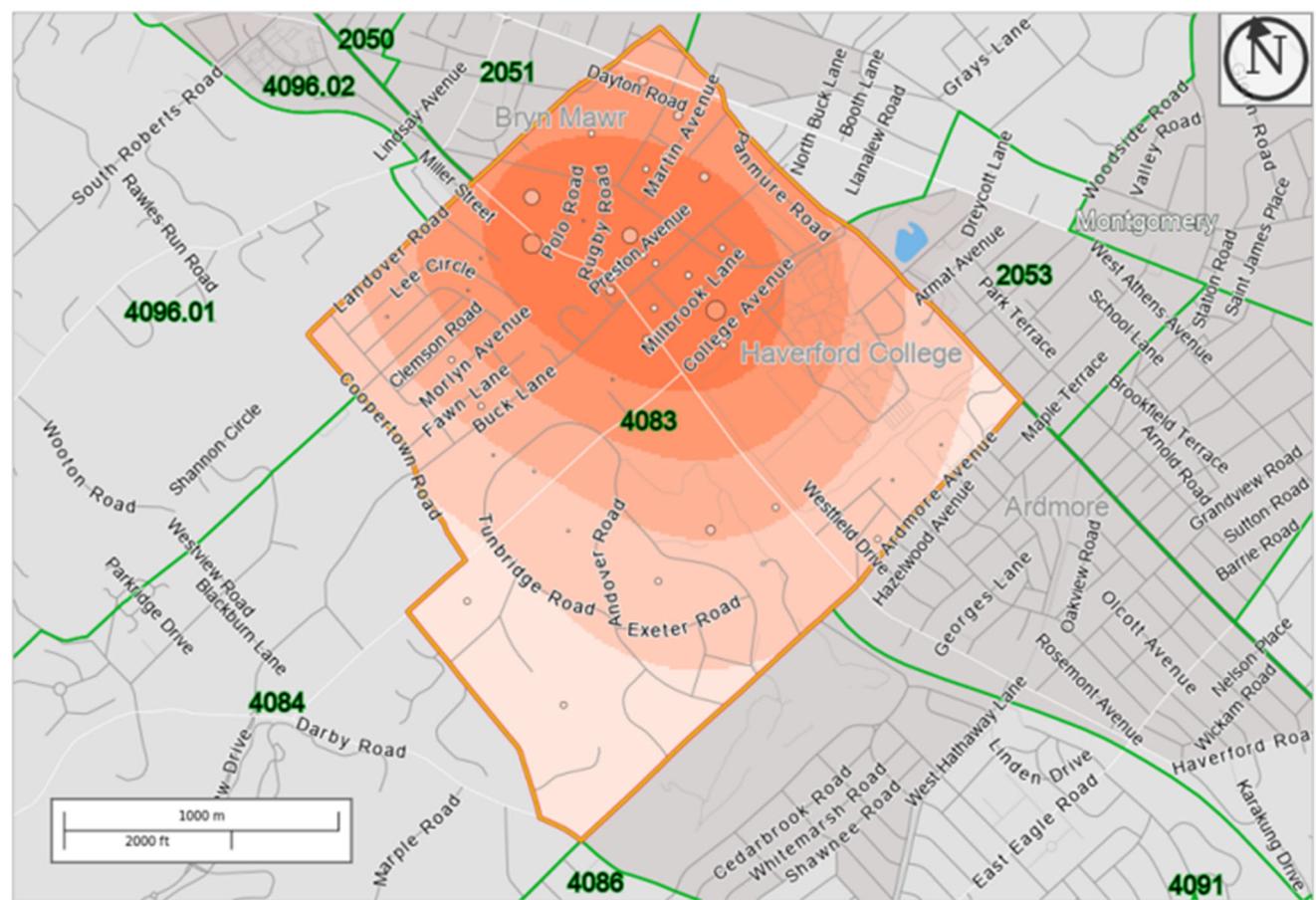


Figure 3: Map representing the count and density of jobs in Haverford Township. Employers are concentrated in the Brynford neighborhood

Street and Sidewalk Infrastructure



The Brynford neighborhood is wedged between and among several important and heavily travelled thoroughfares, including Haverford Road, County Line Road and Route 30 (Lancaster Avenue). Throughout the public engagement process, stakeholders noted an increase in cut-through traffic in recent years, as motorists attempt to travel between Lancaster Avenue and Haverford Road using local neighborhood streets as their routes.

Many streets within the Brynford study area are designated as 25 mph streets. The neighborhood is bordered by higher speed roads, with posted limits as high as 45 mph. When the interior streets are used as cut-throughs between the major thoroughfares, there is a risk that motorists will not recognize the transition to slower residential streets, maintaining the faster speeds that they are accustomed to on the major streets.

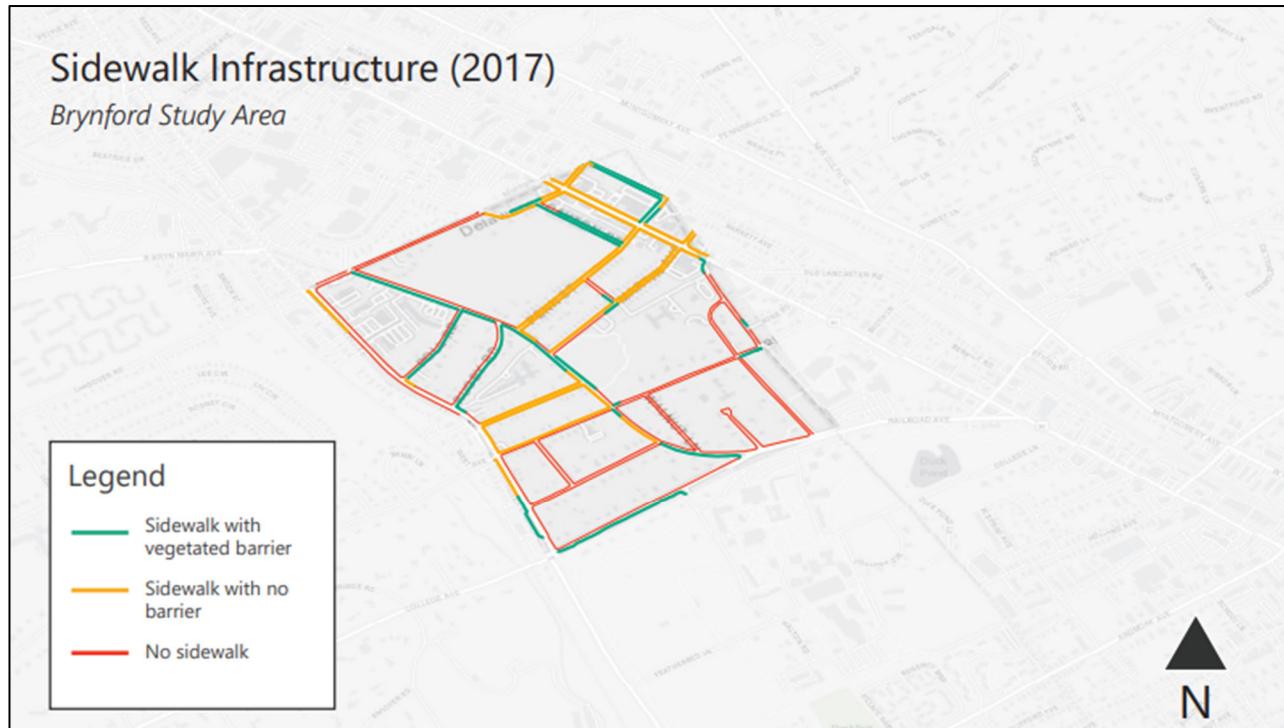


Figure 5: Map of Brynford Sidewalk Network as of 2017. The map differentiates between sidewalks with a vegetated barrier, sidewalks with no vegetated barrier, and no sidewalk at all.

The map above shows the sidewalk infrastructure using 2017 data from the Delaware Valley Regional Planning Commission. No significant improvements have been made to the network since that time. The quality and connectivity of the sidewalks in the neighborhood varies greatly, with some streets having no sidewalks at all and others having not only sidewalks but a vegetated barrier. Vegetated barriers often serve three purposes when paired with sidewalk infrastructure: 1) they act as a traffic calming mechanism by drawing attention to the sidewalk area and tightening the roadway for drivers; 2) they provide greenery, and especially tree canopy, create a cooling effect for pedestrians

making walking more pleasant and safe during hot days; 3) they create a physical barrier between pedestrians and vehicles, supporting a more comfortable walking environment for pedestrians. The Brynford neighborhood is already host to a robust tree canopy, therefore, cooling is not a top priority. It is important to note that the sidewalk data should also contain crosswalks but there were none indicated in the data set.



Figure 6: Photo displaying a sidewalk with no vegetated barrier. The sidewalk is directly against the roadway with nothing in between.



Figure 7: Photo displaying a sidewalk with a vegetated barrier. A strip of grass with trees is between the roadway and the sidewalk.

Safety Analysis: Crash Data

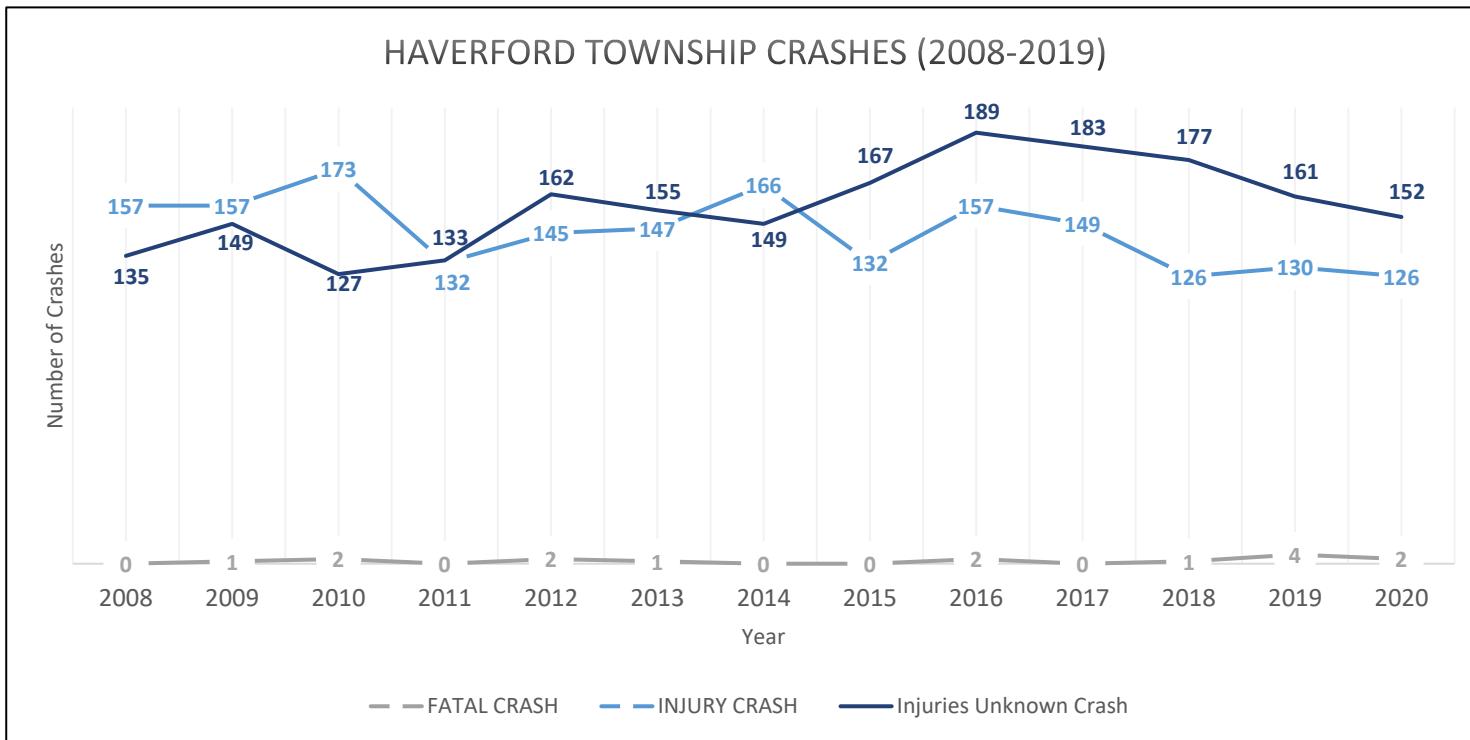


Figure 8: Crashes per year in Haverford Township separated by fatal crash, injury crash, and injuries unknown.

At its core, this study is driven by Haverford Township's commitment to safe streets for all users, building and maintaining places where zero deaths or serious injuries occur on Township roadways. Data from Pennsylvania Department of Transportation shows Haverford Township had a total of 3,951 crashes from 2008 to 2019 with an average of 300 crashes per year. 48% of those crashes are documented to have resulted in a death or serious injury (PennDOT).

Over this eleven-year pre-COVID period, 139 pedestrians have been involved in vehicle crashes and 15 people (both pedestrians and vehicle passengers) have been killed. There has been no significant decrease in these crashes, indicating that programmatic and design intervention is necessary to make Haverford Township a safer place to walk, bike, roll, and drive.

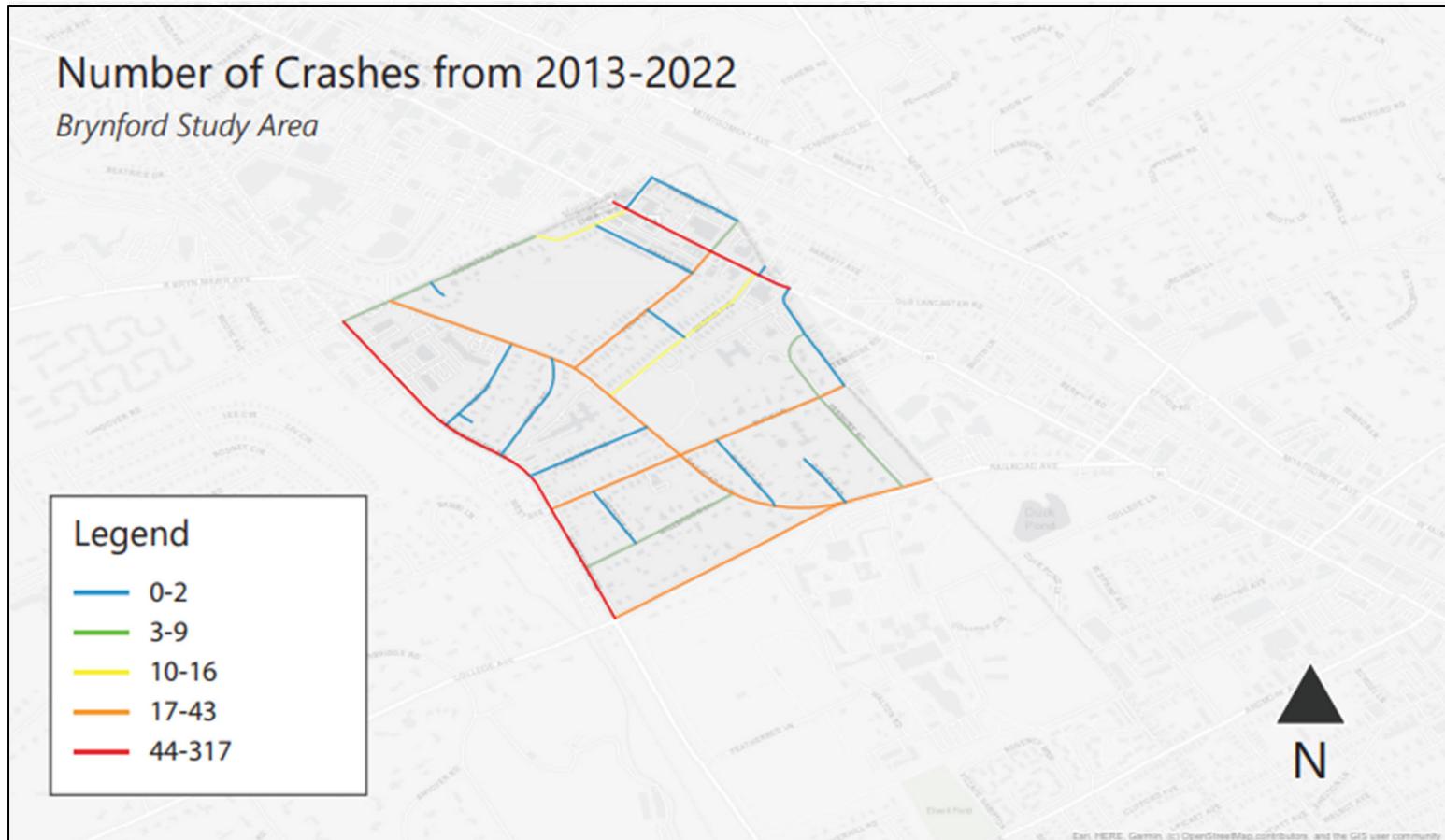


Figure 9: Number of crashes from 2013 to 2022 represented on the roadways of the Brynfld neighborhood

Brynfld is bounded and bisected by the most dangerous streets in the neighborhood. Over the span of 2013-2022, 808 crashes have occurred in the Brynfld area, representing 5.5% of the total reported motor vehicle accidents in Haverford Township. The map and chart above represent the locations and number of crashes across the neighborhood and provide an indication of the highest risk areas.

Haverford Road and Lancaster Avenue have crash numbers far above any of the other streets, even when normalized by mileage. These streets are the major thoroughfares for the area and serve as commuting routes for people traveling to work. They have the widest roads and highest posted speed limits (45 mph).

Brynfld residents must cross these roads to access the local grocery store, (ACME on Lancaster Avenue), the two train stops (Norristown High Speed Line and Paoli-Thorndale Regional Rail Line), shops and commercial services on Lancaster, and all residents who live on the west side of Haverford Road must cross to access the rest of the neighborhood.

Railroad Avenue also has a high number of crashes that have occurred. It was identified by the Steering Committee as a road used as a cut through for commuters. This suggests that the concerning driving behavior that occurs on Haverford Road and Lancaster Avenue is also being practiced within the neighborhood.

Built Environment – High Risk Features

Below are several high-risk road features that exist throughout the Brynfld neighborhood. Obstructions on the sidewalk, lack of sidewalk infrastructure, high volumes of motorists, wide curb cuts, and degraded crosswalks were all observed by the project team out in the field and identified by the public as areas of concern. Addressing these features is a key goal of the recommendations that appear at the end of this study and serve as one decision making factors on page 16

Road Name	Number of Crashes (2013-2022)	# of Crashes/mile/year
Lancaster Avenue	300	115
Haverford Road	317	49
Pennswood Road	9	12.9
Old Lancaster Avenue	16	12.3
Penn Street	26	9.6
College Avenue	43	9.5
Buck Lane	28	6.2
Railroad Avenue	37	5.1
Martin Avenue	11	4.4
County Line Road	7	2.3
Millbrook Lane	5	2.2
Haydock Road	2	2
Panmure Road	6	1.8
San Marino	1	0.71



Figure 10. High Risk Road Features in the Brynfld Neighborhood

Engagement Efforts

The community engagement process for the Brynford Safe Streets Study was designed to understand the areas of high risk for walkers and bikers in the neighborhood, map destinations to which community members would like to be connected, and gather feedback on draft recommendations. With the goal of hearing from as many community members as possible, the project team organized a public survey, a walking charette, two community meetings, and targeted outreach to community members who were not represented in other forms of outreach. Over 120 residents were represented through this process and their input informed the resulting recommendations.

Key Risks

When asked to identify their top safety concerns in the neighborhood, vehicle speed was the number one concern among survey participants, with 44% of people ranking it as their top concern. In every conversation with community members, speeding came up, especially from vehicular traffic cutting through the neighborhood between Haverford Road and Lancaster Avenue.

Lack of sidewalks was the second highest ranking concern among survey participants and was identified by the steering committee and public meeting attendees as a safety risk.

Many residents raised concerns about motorists failing to comply with the stop signs in the neighborhood. Mainly focused on the intersections with Railroad, many drivers fail to come to a complete stop. Some residents feel that the stop signs are being ignored because there are too many of them in the neighborhood at intersections where drivers can already see any motorists or pedestrians coming.



Figure 11: Meeting participants sharing their key destinations and risk areas at the first public meeting

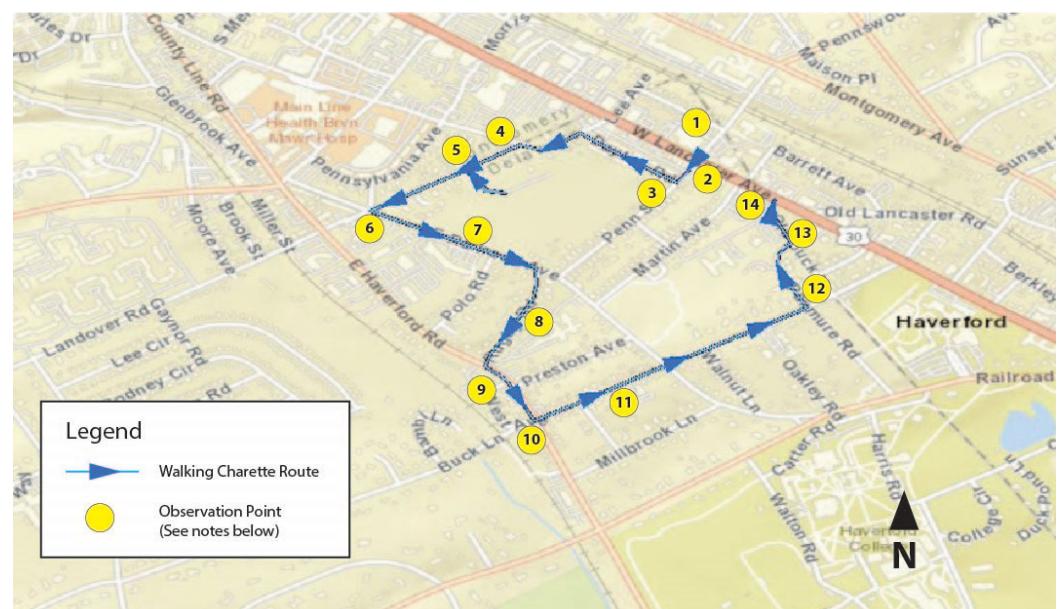


Figure 12: Walking Charrette route. Full details on the walking charette can be found in Appendix B

Key Destinations

As noted earlier in this study, Brynford is home to a significant number of commercial, religious, recreational, health, and academic institutions. The dense development of the neighborhood means that all of these places are within a half mile radius of the center of the neighborhood. With safe and accessible walking and biking infrastructure, all intra-neighborhood trips could be made by foot, bike, wheelchair, or other micro mobility mode. In order to make that possible, these key destinations must be well connected.

These places have been identified through public engagement and desktop analysis and are shown on the map above. The locations that are mapped have been identified as “key destinations”, prioritizing them for connectivity. These destinations include large employers, as the transportation needs of people who commute and work in the neighborhood, especially those who work low-wage and frontline jobs, are a priority for this study. For a full list of destinations, see Appendix A.

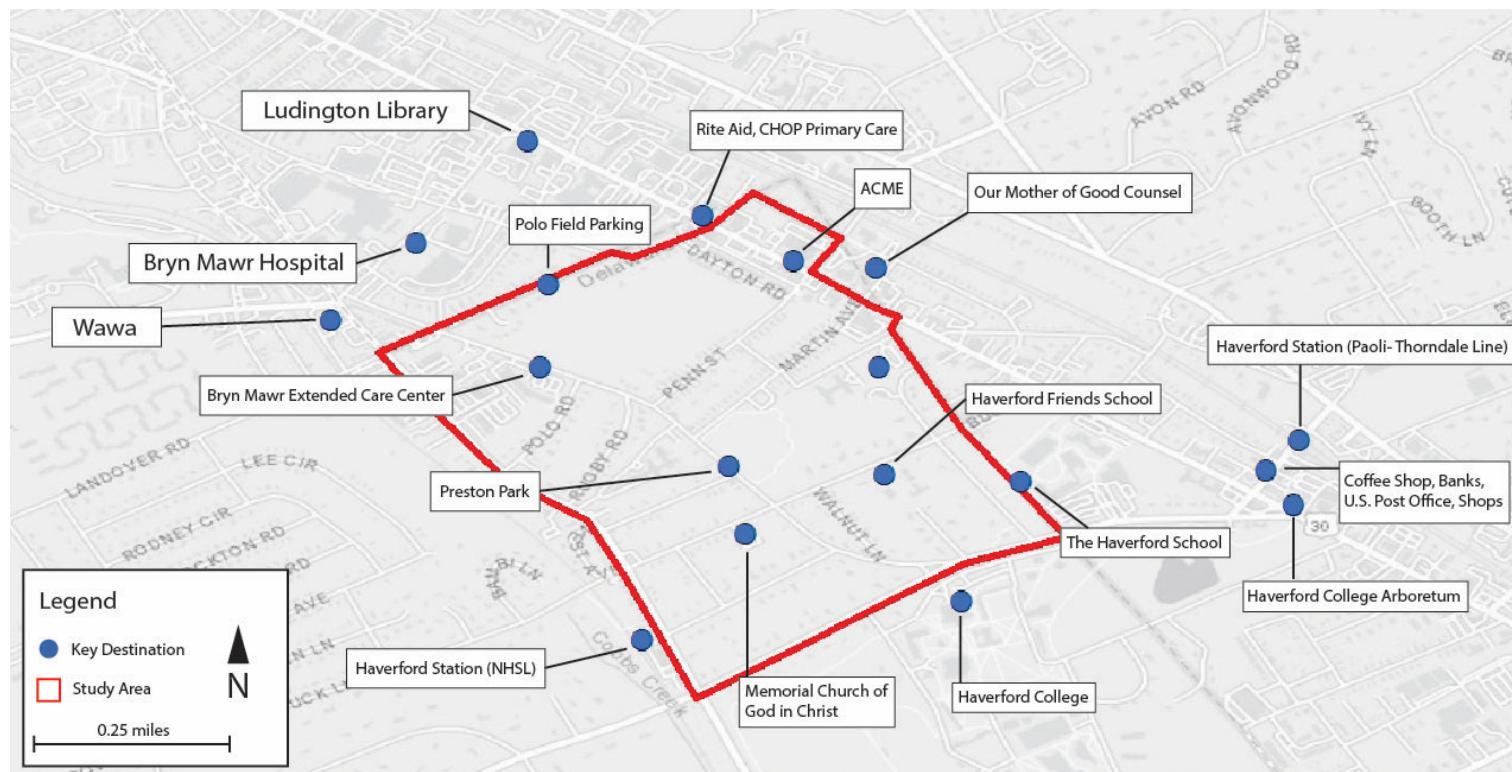


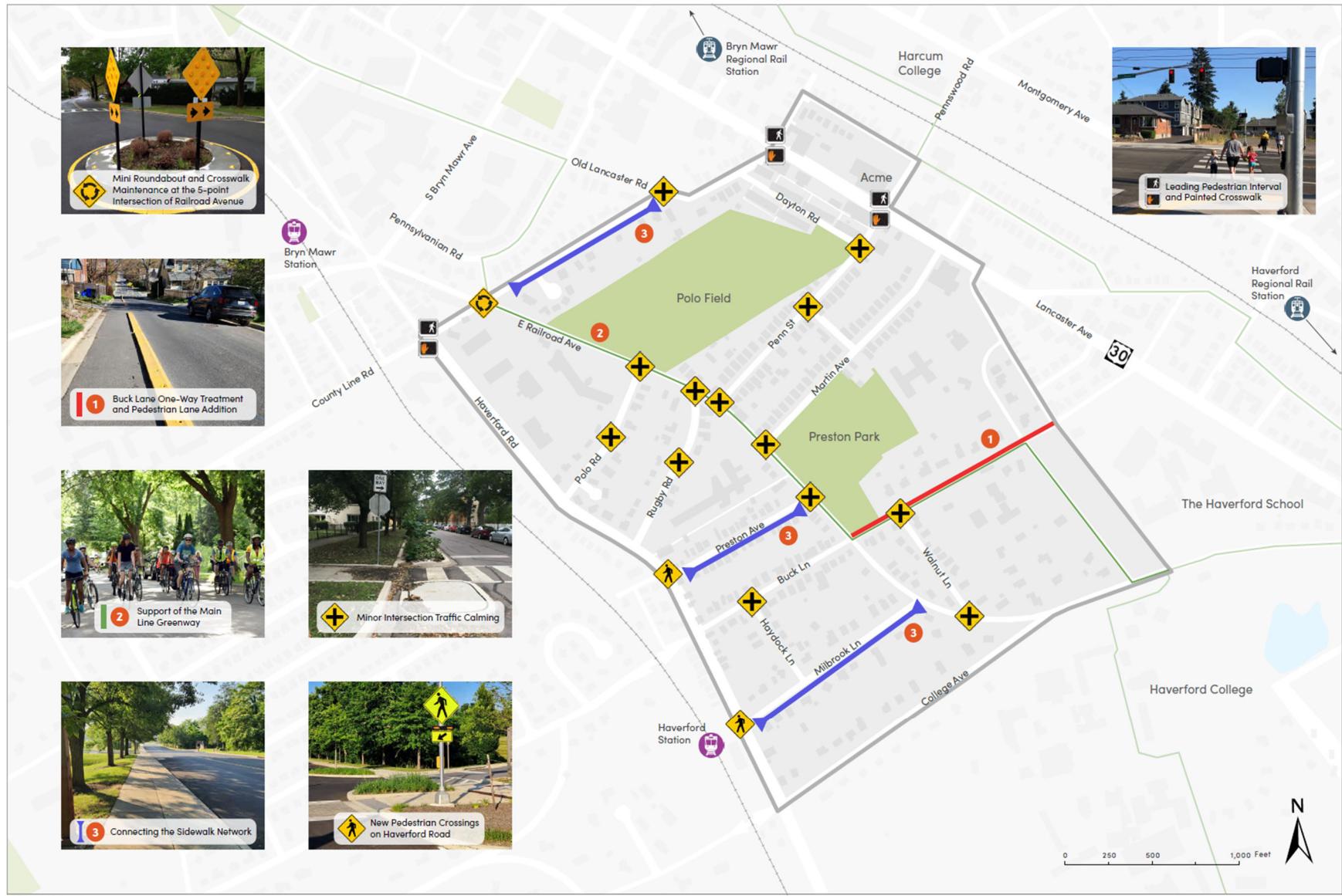
Figure 13. Map with key destinations identified through community engagement efforts

Decision-making Factors and Recommendations for Improvement

Through public engagement, safety data analysis, and an audit of existing infrastructure, a series of factors were developed to inform the list of recommendations and their implementation. These factors support the implementation of safety improvements in a realistic and equitable way, taking into account the phasing of these projects.

People and Equity	
Factor	Description
Utility for Transit Dependent Populations	Increase mobility for people who are elderly, disabled, transit riders, workers commuting to Haverford, children, or any other group who does not have easy access to a personal vehicle
Supports bringing infrastructure to ADA Compliance	Accessibility of infrastructure following ADA guidelines
Safety Risks	
Number of Key Risks Addressed	The key risks that were identified on page 14 are priority areas identified by community members to address
Addresses an area in the High Crash Network	Referencing the data discussed on page 12, areas with high numbers of crashes were prioritized for improvement
Places and Connectivity	
Number of Key Destinations within 500 ft	Key Destinations were identified on page 15
Proximity to bus and train stops	Transit stops are captured in the key destination list and highlighted here because transit users are always pedestrians at some point in their trip
Opportunity to promote green space and vegetation	Preserving and improving the vegetation and its role in beautification, cooling, and stormwater management
Addresses a gap in the sidewalk network	A key priority for residents, filling a gap in the sidewalk network
Implementation	
Cost	Projects that realistically fit within the Township's budget and financing options for design, development, and maintenance are prioritized
Implementation Timeline	Projects with a variety of implementation timelines were selected, aiming to provide short-term wins while also working towards a long-term vision
Land Ownership	Projects on land that is currently public right of way is more viable for improvement than land
Complements an Existing or Planned Transportation Project	Projects that present coordination with existing or planned projects and other regional goals

Map of Recommendations for Improvement



HAWTIG073 - July 21, 2023

Buck Lane One Way Treatment and Pedestrian Lane Addition

Cost Estimate: \$40,000 - \$75,000

Recommendation: 1,900 feet of one-way designation on Buck Lane between Railroad and Lancaster. This one-way designation and narrower roadway will remove the opportunity to pass, act as traffic calming, and make Buck Lane a less convenient cut-through, resulting in reduced traffic volumes on both Buck Lane and Railroad Avenue. The roadway would maintain sufficient width for truck access and emergency vehicle access. Through painted strips, signage, and reflective features, a pedestrian walkway should be created with a buffer zone between the roadway and the pedestrian zone. The cost estimate for this recommendation includes striping/delineators, feasibility study, and other costs.

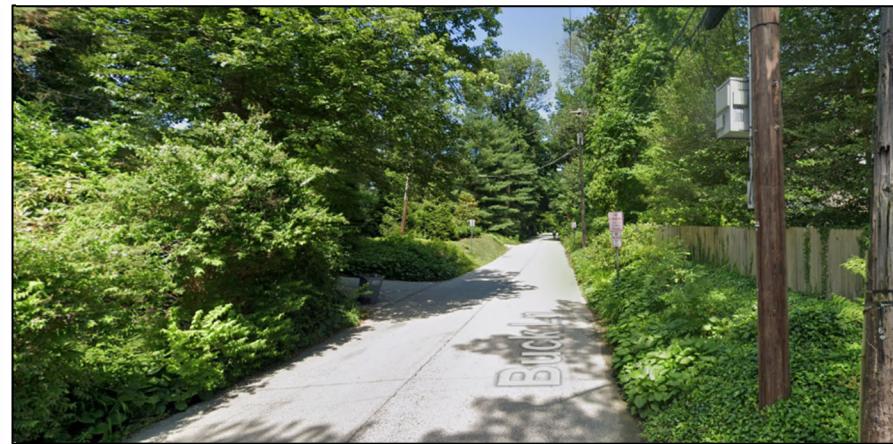


Figure 14: Current Condition of Buck Lane

Buck Lane is a key connector to the bike route to Haverford Reserve, both train stations, Memorial Church of God in Christ, Preston Park, Haverford Friends School, The Mainline Arts Center, and The Haverford School. This road has the potential to be a key route to school and parks for children, but sidewalk infrastructure stops shortly after the intersection of Buck Lane and Railroad and does not reappear until the intersection with Panmure Road.

Data from Haverford Police traffic studies indicate that speed is not a concern on Buck Lane, several studies have shown that the average speed is 25 mph, abiding by the posted speed limit (see Table 1

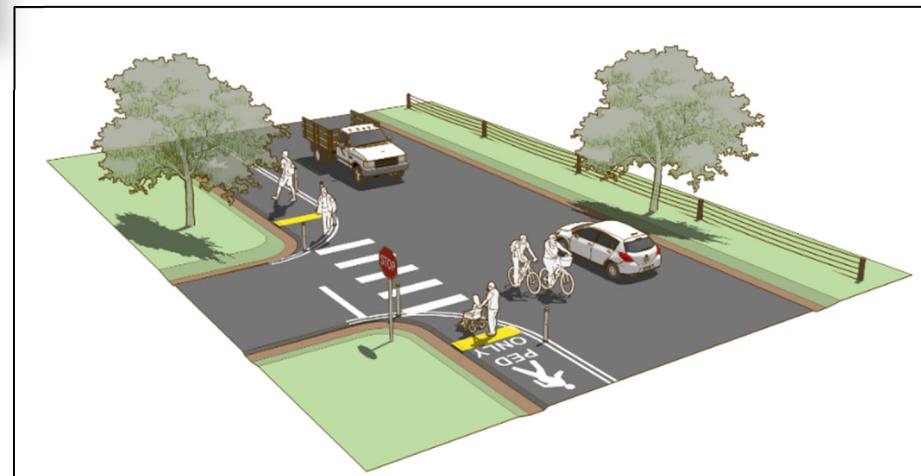


Figure 15: Example of a painted pedestrian lane with intersection warning strips, and painted lane markings. Source: Small Town and Rural Design Guide

below). In contrast, the traffic volume is a concern, as the number of drivers traveling west on Buck Lane is at least 50% greater than those traveling east, suggesting that it is being used as a cut-through to get from Lancaster Ave to Haverford Road.

Location	Days of Study	Average Speed	Traffic Count (West)	Traffic Count (East)
Buck Lane (800 block)	7 days	25 mph	4,439	2,508
Buck Lane (700 block)	13 days	23 mph	8,209	5,417
Preston Ave	12 days	24 mph	2,148	2,517

Table 1: Traffic Data from studies on Buck Lane and Preston Avenue

Leading Pedestrian Intervals

Cost Estimate: \$5,000 - \$7,500

Recommendation: At the intersection of Lancaster Avenue & Penn Street , County Line Road & Lancaster Ave, and Haverford Road & County Line Road, recalibrate the pedestrian signal to provide pedestrians a leading interval of 4 seconds to allow pedestrians to enter the intersection before drivers turning onto Lancaster Avenue begin their turn. This will improve visibility of pedestrians and reduce the chance of a conflict between vehicles and pedestrians. Work with PennDOT for both financing, maintenance accountability, and schedule.

Lancaster Avenue is one of the most dangerous streets in the study area, yet residents must cross it to access the local grocery store, bus stops, and regional rail. At the intersection of Lancaster and Penn Street, the pedestrian signal changes at the same time for drivers, increasing the risk of drivers going through the light without giving pedestrians the right of way.



Figure 16. A Person on a Wheelchair Crossing Lancaster Avenue

Mini Roundabout and Crosswalk Maintenance at the 5-point intersection of Railroad

Cost Estimate: \$75,000 - \$125,000

Recommendation: Reduce points of conflict and vehicle speeds by minimizing intersection size through the construction of a mini roundabout at the intersection. This roundabout would require vehicles to slow down and observe other travelers at the intersection. This improvement would also be paired with repainting and scheduled maintenance of crosswalks connecting the existing sidewalk network.

The intersection of Railroad Ave, County Line Road, and Wayside Road is one of the most confusing intersections in the neighborhood. Located at the northwestern point of the neighborhood, it serves as an entrance to the neighborhood but does not indicate any requirement of slower speeds. The signs restricting entrance to Wayside Rd are not consistently followed. As a route to the public library, Polo Field, and Haverford Road, it is essential that this area be safe to navigate for pedestrians, bicyclists, and drivers alike by reducing speeds and potential points of conflict.

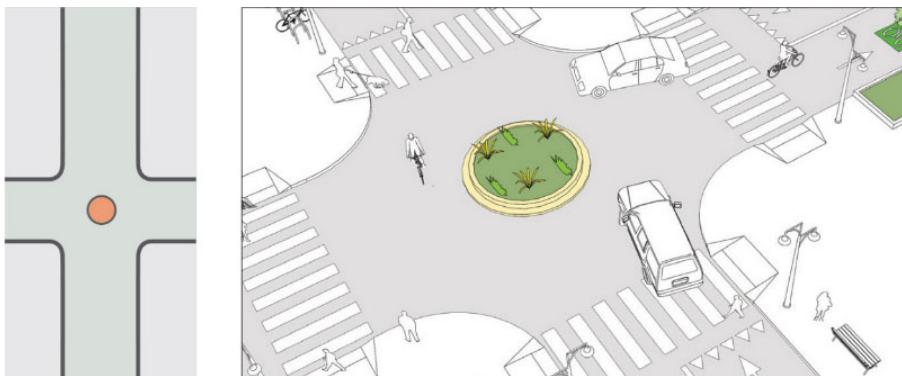


Figure 14: Example of a mini roundabout at a four-way intersection. Source: Global Street Design Guide

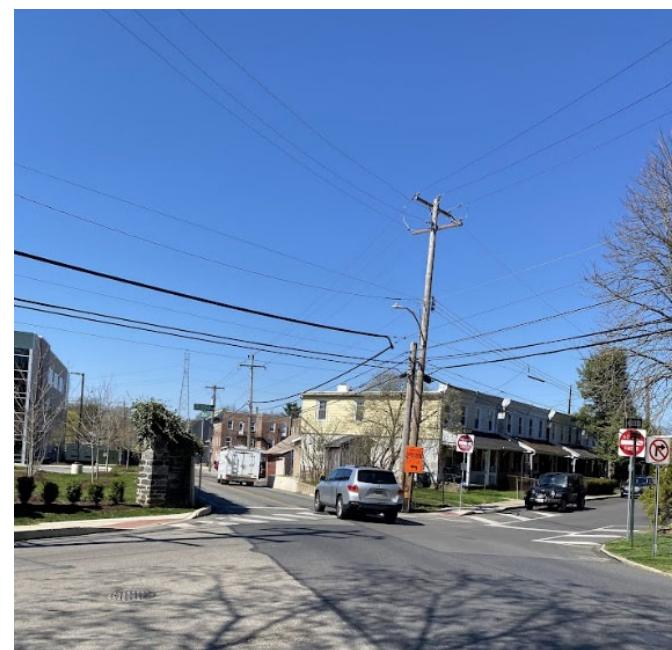


Figure 17. Current Condition of the five point intersection at Railroad, County Line and Wayside Roads



Figure 18: Example of a mini roundabout with plantings and decorative imprints on the concrete curb. Source: [Bicycle Safety Guide and Countermeasure Selection System \(pedbikesafe.org\)](http://BicycleSafetyGuide.org)

Formation of Safe Streets Committee

Cost Estimate: Not Applicable

Recommendation: Formation of a long-standing committee that includes representatives from Haverford Township, Lower Merion Township, Haverford College, Memorial Church of God in Christ, PennDOT, Main Line Greenway, Bryn Mawr Hospital, and any other community stakeholders. This Committee should be diverse, supported by local government, and long-standing to keep the projects on track. The committee would meet on either a quarterly or biannual basis to review progress on improvements within the township, public engagement efforts, work at the intersection of art and transportation, and partnership needs. This committee would provide transparency and accountability as this work progresses: champions and spokespeople who could answer questions from the community, and a more efficient organizing structure when questions and needs arise.

The implementation of the bicycle and pedestrian safety improvements suggested by this study involve long term work with a multitude of stakeholders. In order to maintain momentum, build community trust, maintain strategic partnerships, support funding compliance, and meaningfully engage the community, this study suggests the formation of the Bike and Ped Safety Committee.

Connecting the Sidewalk Network

Cost Estimate: \$750,000 - \$1.25 MM

The Brynford Neighborhood has several gaps in the sidewalk network that should be addressed to make it a safe and walkable place.

Recommendation:

County Line Road: There may be available right-of-way on the south-east side of the street. Costs would be for clearing, grading, and adding a new sidewalk between Railroad Avenue and Old Lancaster.

Millbrook Lane: There may be available right-of-way on the south-east side of the street. Costs would be for clearing, grading, and adding a new sidewalk.

Widening sidewalks on Preston Ave: While Preston Ave has existing sidewalks, they are quite narrow. By reducing the roadway width to calm traffic, significant additional space would become available for increased sidewalk space.

Support of the Main Line Greenway Trail

Cost Estimate: \$1,000 - \$5,000

Recommendation: Implement signage and alignment with other traffic calming projects at key destinations along the Main Line Greenway Trail. Coordinate with other townships along the trail for signage and infrastructure design for cost savings and to provide more consistent infrastructure for future users of the route. Cost estimate is for 5 wayfinding signs (per Main Line Greenway design guidelines). This is for signage in study area only, not Township-wide. Costs are based on new poles and signs throughout. Signage may be able to be added to existing poles, and it is possible Lower Merion may provide signs at cost, with said signage attached by Township DPW.

The Mainline Greenway Trail is a proposed 40-mile connection of low-stress roads connecting shops, schools, parks, employers, and more along the Philadelphia Main Line. A significant portion of the proposed trail goes through Brynford connecting Haverford College, Polo Field, Preston Park, Acme, the Haverford train station (Paoli-Thorndale Line), and Bryn Mawr Hospital. With the advocacy around the Main Line Greenway Trail already established and neighboring Townships working towards implementation, Brynford has the opportunity to participate in a regional effort to improve bicycle connectivity.

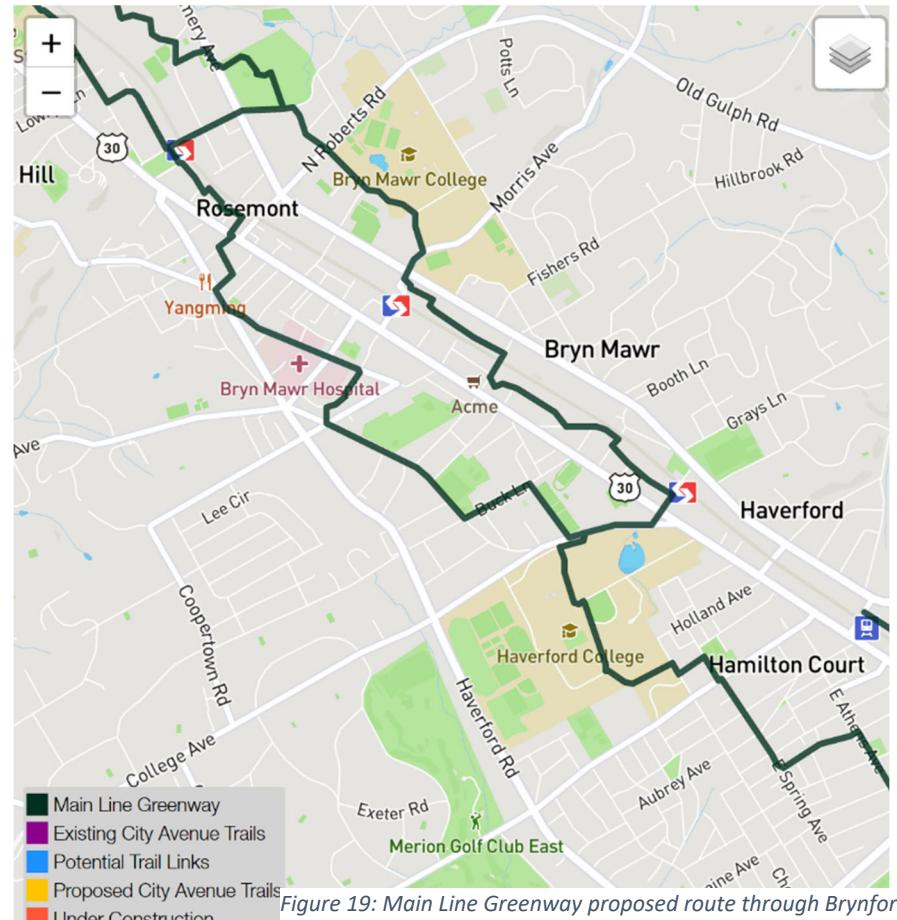


Figure 19: Main Line Greenway proposed route through Brynford

Pedestrian Crossings on Haverford Road

Cost Estimate: \$375,000 - \$425,000

Recommendation: Place crosswalks with pedestrian flashing beacons along Haverford Road at 3 locations. Incorporate these crosswalks into the construction of the road diet to decrease labor and material costs. A high priority crosswalk area is at Haverford Road and Millbrook Lane to provide a route for people who have gotten off of the Norristown High Speed Line to cross into the neighborhood. Another potential crosswalk location is Preston Avenue. With Haverford Road potentially being redesigned, there are possible opportunities to weave these improvements into the existing project, with cost share and other savings opportunities as PennDOT is project lead.

Haverford Road is one of the most dangerous roads in the study area, yet residents on the western side of the road must cross it to access neighborhood amenities by foot. The Norristown High Speed Line is also located on the western side of Haverford Road. With the road diet that is potentially being planned for Haverford Road, the Township has an opportunity to incorporate pedestrian infrastructure and improve safety for commuters and residents.



Figure 20: Example of Rapid-Flashing Beacon Pedestrian Crossings. Source: [New Rapid-Flashing Beacon Shows Great Promise in Improving Pedestrian Safety — Center for Transportation Safety \(tamu.edu\)](http://New%20Rapid-Flashing%20Beacon%20Shows%20Great%20Promise%20in%20Improving%20Pedestrian%20Safety%20-%20Center%20for%20Transportation%20Safety%20(tamu.edu))

Improve Accessibility and Visibility through the Development of an Encroachment Management Plan

Cost Estimate: Not Applicable

Recommendation: To improve visibility at intersections and accessibility for walkers with visual or other impairments, the team recommends the development of an Encroachment Management Plan that addresses vegetation management and changes to signage placement to provide adequate clearance on sidewalk space and height clearance underneath any signage.

The age of Brynford means that several roads meet at unusual angles, making it difficult for drivers to see oncoming traffic, pedestrians, and bicyclists. The trees and bushes also risk encroaching into sightlines and sidewalks, making it more difficult to see oncoming vehicular and pedestrian traffic. When vegetation encroaches onto sidewalks, it poses a significant obstacle for walkers who have a visual impairment. Signage can pose the same safety risk if they are placed on the sidewalk or that are not placed above head height.

Crosswalk Painting and Maintenance

Recommendation: Many of the recommendations contained in this study include crosswalks to ensure that pedestrians have safe places to cross the road. There are some areas that do not have another major improvement, but still need a crosswalk. This recommendation is for a crosswalk at the intersection of County Line Road and Old Lancaster Road

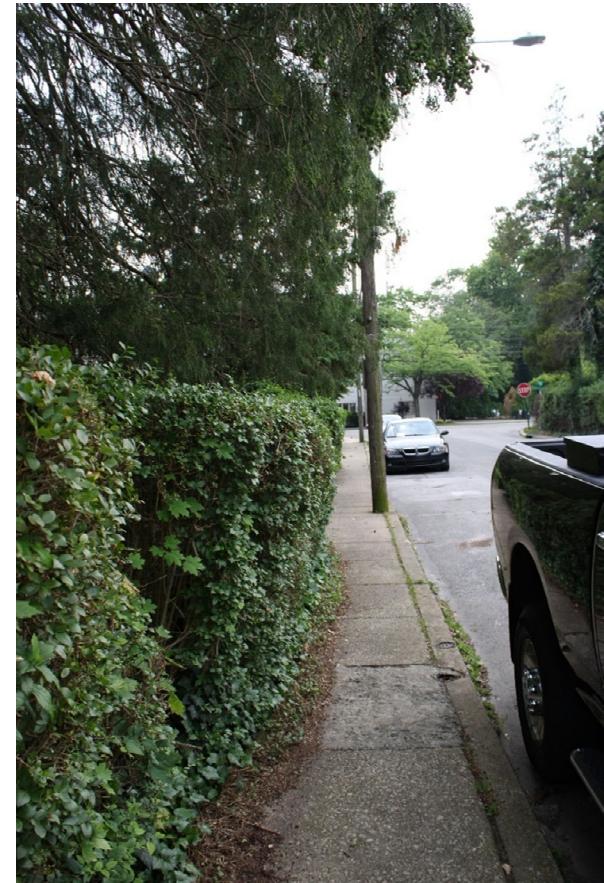


Figure 21: Vegetative encroachment on the sidewalk.
Photo credit: CHPlanning

Minor Intersection Traffic Calming

Cost Estimate Type A: \$120,000 - \$150,000

Cost Estimate Type B: \$225,000 - \$300,000

Cost Estimate Type C: \$15,000 - \$25,000

Cost Estimate Type D: TBD²

Throughout the Brynford neighborhood, there are several intersections that experience high speeds, drivers ignoring stop signs, and unsafe turn radii. We have provided three intersection recommendations for intersections throughout the Brynford neighborhood. The applications of these recommendations are dependent on the characteristics of the intersections as described below:

Recommendation Type A: At the beginning of residential streets that experience cut-through traffic and high speeds, a raised crosswalk with a curb extension is recommended. This forces drivers to make slower turns to prevent conflict with other drivers and pedestrians and to fit within the tighter geometry. This curb extension also provides an opportunity to realign drainage, add green stormwater infrastructure, and modernize the curb cut and tactile warning systems. The following intersections are recommended for this improvement:

- Dayton Road and Penn Street
- Buck Lane and Walnut Lane
- Rugby Road and Railroad Avenue
- Haydock Lane and Buck Lane



Figure 22: Raised crosswalk with curb extension to narrow the entrance to residential streets

² Preliminary cost estimates were not able to be completed before publication.

Recommendations Type B: To address the vehicle speeds and the need for crosswalks along Railroad Avenue, intersections between Railroad and several residential streets are appropriate for a raised intersection with crosswalks.

- Preston Ave and Railroad Ave (opportunity for creative placemaking as this intersection goes directly to Preston Park)
- Martin and Railroad Ave
- Penn and Railroad Ave
- Penn Street and Miller Avenue



Figure 24: Raised intersection



Figure 23: All-way stop sign

Recommendation Type C: At high traffic intersections where a full stop is required to determine who has the right-of-way, an all-way stop is recommended. These all way stops can also serve to introduce drivers to the new street type that they are entering and prepare them for the subsequent traffic calming interventions on that street. These stop signs may be paired with "Road Narrows Ahead" or "Drive Slow, Children At Play" signs.

- Walnut Lane and Railroad Avenue
- Polo & Railroad Avenue



Figure 25: Vegetated chicane on tree-lined street

Several residential roads in Brynford are straight and wide in their design. For areas that require additional traffic calming once drivers pass the intersection, the project team recommends mid-block chicanes. Chicanes create a slight curve in the road through the use of curb bump outs or small islands. This requires drivers to slow down and pay attention to the changes in street geometry. The noise concern that we heard regarding speed humps does not apply to chicanes as there is no obstacle to go over. There is also an opportunity for plantings and green stormwater infrastructure to be incorporated.

Recommendation Type D: Build mid-block chicanes on Rugby Road and Polo Road. This aims to encourage slower speeds on these residential roads that are directly connected to one of the highest speed roads in the neighborhood.

Conclusion

The completion of the Brynford Safe Streets Study signifies Haverford Township's commitment to creating a well-connected, safe, and accessible transportation system for all its residents. The study, focused on the Brynford neighborhood, analyzes the current bicycle and pedestrian infrastructure in the neighborhood and puts forth recommendations for improvement of the neighborhood's physical and non-physical infrastructure. This study's comprehensive approach involves both data analysis and active public engagement efforts to get insights and incorporate the perspective of community members for improvements of the neighborhood's bicycle and pedestrian safety. This methodology enables the recognition of the diverse impacts of transportation barriers on individuals with varying incomes, ages, disabilities, and historical contexts. By considering these differences, the study aims to ensure equitable and inclusive improvements in the transportation system in the Brynford neighborhood.

The resulting recommendations include adding pedestrian crossings at select streets, minor intersection traffic calming treatments and formation of Safe Streets Committee. These recommendations serve as a foundation for future improvements and inform similar safety studies across the Township. This document aims to serve as a foundation of the Haverford Township Qualified Safety Action Plan which will serve as a guide for investments, policies, and programs for improving the safety of walking, cycling, and rolling in Haverford Township. Moving forward, the focus on safety, equity, and accessibility of the Township will be paramount to ensuring that all residents can thrive in a connected and vibrant living environment.

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Appendix A: Key Destination List

Academic Institutions

- Haverford Friends School
- The Haverford School
- Our Mother of Good Council School
- Haverford College

Grocery Stores

- ACME on Lancaster Avenue
- Wawa

Churches

- Memorial Church of God in Christ
- Our Mother of Good Council
- Meeting for Worship at Haverford Friends School

Arts and Cultural Institutions

- Main Line Art Center
- Rohr Center for Jewish Life

Parks

- Polo Field
- Preston Park
- Haverford College Arboretum

Healthcare Providers

- Bryn Mawr Main Line Hospital
- Bryn Mawr Extended Care Center
- Bryn Mawr Dental Associates
- Pemier Orthopaedics in Bryn Mawr
- Innovative Medical Associates
- Bryn Mawr Pediatrics

Train and Bus Stops

- Bryn Mawr and Haverford Stations on Paoli/Thorndale Regional Rail Line
- Bryn Mawr and Haverford Stations on the Norristown High Speed Line
- SEPTA 105 & 106 Bus (105: 69th to Rosemont, 106: 69th to King of Prussia, both stop by the ACME on Lancaster Ave)

Appendix B: Walking Charette Map and Notes

Observation Point (see map above)	Description	Notes from Residents	Draft Concepts and resident notes for Improvements
1	ACME Markets	The ACME on Lancaster Ave is a key destination as it is the main grocery store serving the neighborhood.	<ul style="list-style-type: none"> - Connectivity to the grocery store is a priority
2	Intersection of Lancaster and Penn Street	Crosswalks at the intersection have not been added since the street was repaved. This would be under PennDOT.	<ul style="list-style-type: none"> - Add crosswalks - Leading pedestrian crossing light
3	Intersection of Dayton and Penn St.	<p>The businesses across the street have very wide curb cuts causing a large point of conflict for motorists exiting the gas station and pedestrians on the sidewalk.</p> <p>The alley off of Penn Street before Dayton Road is a high speed cut through.</p> <p>There are obstructions to the sidewalk (utility pole) that could create difficulty for accessing the sidewalk.</p> <p>Apparently, there is a really treacherous blind corner exiting Dayton Road onto Old Lancaster.</p>	<ul style="list-style-type: none"> - Shorten curb cuts - Explore the ownership of the alley in order to understand whether any improvements are possible (traffic calming) - Move sidewalk obstructions <ol style="list-style-type: none"> 1. Possibility of the addition of a "No Through Traffic" sign at the intersection of Penn and Dayton. This street is used as a cut-through to avoid the lights on Lancaster. We are investigating the concern that navigation apps are directing motorists onto Dayton during high traffic times. 2. Possibility of the installation of temporary speed humps. Speed humps are used throughout the region on streets similar to Dayton Road, i.e. narrow streets with parking on both sides. With ~30 children on the block and a park/playground on the street, Dayton Road could qualify as a "Children's Safety

			<p>Zone". (Other jurisdictions have special rules for such areas. An example of such a program can be found here.)</p> <p>3. There are playground signs on Penn Street. There are none on Dayton. In Lower Merion the playgrounds have posted under the sign a reduced speed limits of 15 MPH. Could such signage be added?</p> <p>4. Years ago residents discussed how Dayton is too short for catching speeders over 25 MPH, making 25 MPH unenforceable. Since 25 MPH was unenforceable why not have 15 MPH signs that are as equally unenforceable. That is how we had the 15 MPH signs. Last October the Township replaced those signs with 25 MPH. Since then, the speeding has been terrible.</p> <p>5. There is something wrong with the placement of the One-Way signs at Old Lancaster and Dayton. There have always been drivers coming down Dayton the wrong way. The sign placement was changed a few years ago and since then the number of vehicles going the wrong way has increased. We need to closely look at the placement and figure out what we can do to stop this extremely dangerous daily occurrence. These people also speed as they are using Dayton as a short cut around the lights on Lancaster.</p> <p>6. At the corner of Dayton and Penn there is a "No Parking Here to Corner" sign. It is very important that this area remains open as it is space needed for</p>
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			<p>a Fire Truck to come up Dayton. The last time the fire trucks came they had to go around the block and come in from the top off of Old Lancaster. This is unacceptable for fires in row homes. The Police Department has told us to call whenever we see it. The cars are there every single day. We had a neighbor call every single day and he was told that he was a nuisance. Dayton does not want to become a nuisance. It would be helpful if the police car can drive up Dayton once a day midday. If they did that for two weeks we could break the regular parkers. Then if they followed up weekly our street would be safer.</p> <p>7. There will be other concerns asked about on Monday. These will probably be focused on how best the buses can make our children safer when coming home.</p> <p>-</p>
4	County Line Road	Lack of sidewalks.	<ul style="list-style-type: none"> - Traffic calming to reduce cut-throughs between Lancaster and Haverford Rd - Add sidewalks to one or both sides
5	Vehicle Entrance to Polo Field Parking	<p>No designated pedestrian access.</p> <p>There is a triangular tract of land adjacent to the park driveway that is undevelopable.</p>	<ul style="list-style-type: none"> - Pedestrian access through acquisition of the small tract of land - Ensure visibility when turning out of parking lot
6	5-point intersection (Wayside Rd, County Line Rd,	This is a confusing and dangerous intersection for vehicles, pedestrians, and bicycles alike.	<ul style="list-style-type: none"> - Reduce points of conflict and vehicle speeds by minimizing intersection size, ensuring crosswalks and stop lines are painted.

	Railroad Ave, Old E Railroad Ave)	The signs restricting entrance to Wayside Rd are not always followed. This is part of the route to the library.	- Conduct an analysis of the intersection to explore whether mini roundabout may be appropriate.
7	Polo Field along Railroad Avenue	There is no designated entrance to Polo Field off of Railroad Avenue but there are several desire lines that show where residents choose to enter the park. Lower Merion Township will be dropping off students using school buses. This is a potential location for that drop off. Stormwater runoff is an issue along the border of this park. Railroad Ave. Railroad Ave, like Buck, is a cut-through and often subject to speeding / haste the way that is true for people moving through a place with no interest in it. Much like Buck, it should be considered for one-way options, or calming options.	- There may be an opportunity to create designated entrances to the park in collaboration with the extended care center. - Designated drop off point for Lower Merion buses. - The combination of a designated park entrance, drop off point, stormwater infrastructure and crosswalks provides a placemaking opportunity, making this side of the park more attractive, accessible, and inviting for the neighborhoods.
8	Rugby Road	Congestion Sidewalks only on one side He has four kids, ages 3-11, who play outside in their yard and he is very concerned about speeding traffic on Railroad, particularly at intersection with Rugby. He says that drivers exiting Rugby can't see around the vegetation and edge out into the middle of Railroad. Then the SE-bound cars speeding down Railroad	- Traffic calming to decrease cut throughs (speed humps, narrowing road) - Sidewalks on both sides of the road

		<p>regularly try to avoid them and swerve, causing frightening situations.</p> <p>Rugby Rd- Rugby enters Railroad Ave on a curve, causing drivers to either swerve out or cut the curve as they turn, which is a danger to other drivers and pedestrians. Cut-through drivers do this at higher speeds. Further, access to and from Haverford Rd is dangerous at Rugby (as well as Polo, Preston and Millbrook) and the curve at Rugby and Haverford Rd in particular has been the site of several fatal accidents. It's hard for pedestrians trying to access Haverford Rd going in either direction as drivers pull out, or in, fast due to speeds on Haverford. I also should note there are often family members who push care patients from Bryn Mawr Village in wheelchairs along Rugby Rd (on the street itself). Bryn Mawr Village is a large care facility located between Haverford Rd, Rugby and Railroad Ave. (In all we have three care facilities within Brynford).</p>	
9	Haverford Road	<p>There is currently a road diet happening for Haverford Road.</p> <p>There are no opportunities to cross Haverford Road, making it a boundary between people who live on the other side and the rest of the amenities in the neighborhood.</p> <p>There are several gaps in the sidewalk network along Haverford Road especially</p>	<ul style="list-style-type: none">- Pedestrian crossings- Complete sidewalk network along Haverford Road- Road Diet (ongoing separate project)

		<p>entrances to the neighborhood from along College Ave / Lancaster Ave / Haverford Road / County Line might have bumpouts with signs</p> <p>"Welcome to Brynford"</p> <p>Please drive carefully. Children at Play.</p> <p>Haverford Rd- is it important to emphasize the need for better timed or flashing pedestrian crossings for pedestrians/bikes to access the high-speed line and bus?</p>	
10	Intersection of Buck Lane and Haverford Ave	<p>This intersection is not bike friendly yet leads to the bike path designation going to Haverford Reserves.</p>	<ul style="list-style-type: none"> - Sharrow or painted bike lane
11	Buck Lane	<p>No sidewalks along the majority of Buck Lane</p> <p>Buck Lane is a key route to access the academic institutions in the neighborhood</p>	<ul style="list-style-type: none"> - Transition Buck Lane to one-way - Make space for a multi-use path (bike and ped) - Traffic Calming to reduce cut throughs
12	Panmure Road	<p>A child was hit by a car on this road about eight years ago. In response, speed humps have been installed</p>	
13	Entrance to Main Line Art Center	<p>There is a desire line going from Panmure Road to the Main Line Art Center</p>	<ul style="list-style-type: none"> - Path to enter Main Line Art Center from Panmure Road
14	Intersection of Old Buck Lane and Lancaster Avenue	<p>The frequency of opportunities to cross Lancaster Avenue is very low.</p> <p>The crosswalk at this intersection is dangerous.</p>	<ul style="list-style-type: none"> - Partnership with Lower Merion Township and PennDOT to coordinate improvements on corridors that bisect multiple township and are state owned/maintained.